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6.1. Artículos arbitrados en publicaciones de circulación internacional indizadas

109 publicaciones. Fecha de actualización Agosto 2025

- 1) Electronic absorption spectra of linear carbon chains in neon matrices. IV. C_{2n+1} $n=2-7$. D. Forney, P. Freivogel, M. Grutter and J. P. Maier, *J. Chem. Phys.* **104** (13), 4954-4960 (1996).
<https://doi.org/10.1063/1.471127> (ISSN 0021-9606, E-ISSN 1089-7690, IF 2.835)
- 2) The $\Sigma_u \leftarrow X \Sigma_g$ electronic absorption spectra of linear C_4 in a neon matrix. P. Freivogel, M. Grutter, D. Forney and J. P. Maier, *Chem. Phys. Lett.* **249** (3-4), 191-194 (1996).
[https://doi.org/10.1016/0009-2614\(95\)01391-1](https://doi.org/10.1016/0009-2614(95)01391-1) (ISSN 0009-2614, IF 1.724)
- 3) Emission spectrum of $C_4 : C \Pi_u \rightarrow X \Pi_g$ in a neon matrix. M. Schäfer, M. Grutter, J. Fulara, D. Forney, P. Freivogel and J. P. Maier, *Chem. Phys. Lett.* **260** (3-4), 406-408 (1996). [https://doi.org/10.1016/0009-2614\(96\)00882-2](https://doi.org/10.1016/0009-2614(96)00882-2) (ISSN 0009-2614, IF 1.724)
- 4) Electronic absorption spectra of Si_n and Si_n ($n=2-4$) in neon matrices. J. Fulara, P. Freivogel, M. Grutter and J. P. Maier, *J. Phys. Chem.* **100** (46), 18042-18047 (1996). <https://doi.org/10.1021/jp962575h> (ISSN 0022-3654, IF)
- 5) Electronic absorption spectra of SiC and SiC in neon matrices. M. Grutter, P. Freivogel and J. P. Maier, *J. Phys. Chem. A* **101** (3), 275-277 (1997). <https://doi.org/10.1021/jp962882n> (ISSN 1089-5639, E-ISSN 1520-5215, IF 2.6)
- 6) Infrared bands of mass-selected carbon chains C_n ($n=8-12$) and C_n ($n=5-10,12$) in neon matrices. P. Freivogel, M. Grutter, D. Forney and J. P. Maier, *Chem. Phys.* **216** (3), 401-406 (1997). [https://doi.org/10.1016/S0301-0104\(97\)00038-4](https://doi.org/10.1016/S0301-0104(97)00038-4) (ISSN 0301-0104, IF 1.569)
- 7) Electronic absorption spectra of carbon chain anions C_{2n+1} ($n=2-5$) in neon matrices. D. Forney, M. Grutter, P. Freivogel and J. P. Maier, *J. Phys. Chem. A* **101** (29), 5292-5295 (1997). <https://doi.org/10.1021/jp970954k> (ISSN 1089-5639, E-ISSN 1520-5215, IF 2.6)
- 8) Electronic absorption spectra of C_4 and C_6 chains in neon matrices. P. Freivogel, M. Grutter, D. Forney and J. P. Maier, *J. Chem. Phys.* **107** (22), 22-27 (1997). <https://doi.org/10.1063/1.474369> (ISSN 0021-9606, E-ISSN 1089-7690, IF 2.835)
- 9) Electronic absorption spectra of carbon chain anions C_{2n} ($n=4-7$) in neon matrices. P. Freivogel, M. Grutter, D. Forney and J. P. Maier, *J. Chem. Phys.* **107** (12), 4468-4472 (1997). <https://doi.org/10.1063/1.475314> (ISSN 0021-9606, E-ISSN 1089-7690, IF 2.835)
- 10) Diffusion of mass-selected carbon atoms and molecules in argon and neon matrices. M. Grutter, P. Freivogel, D. Forney and J. P. Maier, *J. Chem. Phys.* **107** (14), 5356-5360 (1997). <https://doi.org/10.1063/1.474245> (ISSN 0021-9606, E-ISSN 1089-7690, IF 2.835)

- 11) $A^2\Sigma^+ \leftarrow X^2\Pi$ Electronic absorption spectrum of CCO in a neon matrix. J. Fulara, M. Grutter, M. Wyss and J. P. Maier, *J. Phys. Chem. A* 102 (20), 3459-3461 (1998). <https://doi.org/10.1021/jp980879t> (ISSN 1089-5639, E-ISSN 1520-5215, IF 2.6)
- 12) Electronic spectra of carbon chains and relevance to astrophysics. D. A. Kirkwood, H. Linnartz, M. Grutter, O. Dopfer, T. Motylewski, M. Pachkov, M. Tulej, M. Wyss and J. P. Maier, *Faraday Discuss.* 109, 109-119 (1998). DOI: 10.1039/A800072G (ISSN 1364-5498, IF 3.797)
- 13) Electronic absorption spectra of BC, BC⁺, BC₂⁺ and BC₂⁺ in neon matrices. M. Wyss, M. Grutter and J. P. Maier, *J. Phys. Chem. A* 102 (46), 9106-9108 (1998). <https://doi.org/10.1021/jp9830530> (ISSN 1089-5639, E-ISSN 1520-5215, IF 2.6)
- 14) Electronic spectra of long odd-number carbon chains C₁₇ - C₂₁ and C₁₃ - C₂₁. M. Wyss, M. Grutter and J. P. Maier, *Chem. Phys. Lett.* 304 (1-2), 35-38 (1999). [https://doi.org/10.1016/S0009-2614\(99\)00285-7](https://doi.org/10.1016/S0009-2614(99)00285-7) (ISSN 0009-2614, IF 1.724)
- 15) Electronic absorption spectra of polyacetylene chains HC_{2n}H, HC_{2n}H⁺, HC_{2n-1}N⁺ (n=6-12) in neon matrices. M. Grutter, M. Wyss, J. Fulara and J. P. Maier, *J. Phys. Chem. A* 102 (48), 9785-9790 (1998). <https://doi.org/10.1021/jp983185t> (ISSN 1089-5639, E-ISSN 1520-5215, IF 2.6)
- 16) Electronic absorption spectra of C_{2n}H⁺, C_{2n-1}N⁺ (n=4-7) and C_{2n-1}N⁺ (n=3-7) chains in neon matrices. M. Grutter, M. Wyss and J. P. Maier, *J. Chem. Phys.* 110 (3), 1492-1496 (1999). <https://doi.org/10.1063/1.478022> (ISSN 0021-9606, E-ISSN 1089-7690, IF 2.835)
- 17) Electronic absorption spectra of linear C₆, C₈ and cyclic C₁₀ and C₁₂ in neon matrices. M. Grutter, M. Wyss, E. Riaplov, J. P. Maier, S.D. Peyerimhof and M. Hanrath, *J. Chem. Phys.* 111 (16), 7397-7401 (1999). <https://doi.org/10.1063/1.480062> (ISSN 0021-9606, E-ISSN 1089-7690, IF 2.835)
- 18) Electronic spectra of carbon chains - C_{2n}H⁺ (n=5-12). D.A. Kirkwood, M. Tulej, M.V. Pachkov, M. Schneider, F. Güthe, M. Grutter, M. Wyss, J. P. Maier and G. Fisher, *J. Chem. Phys.* 111 (20), 9280-9286 (1999). <https://doi.org/10.1063/1.479842> (ISSN 0021-9606, E-ISSN 1089-7690, IF 2.835)
- 19) Multi-Gas Analysis of ambient air using FTIR Spectroscopy over Mexico City. M. Grutter, *Atmosfera*. 16 (1), 1-16 (2003). (ISSN 0187-6236, E-ISSN 2395-8812, IF 1.106)
- 20) Open-path FTIR Spectroscopic Studies of trace gases over Mexico City. M. Grutter, E. Flores, R. Basaldud and L.G. Ruiz-Suárez, *Atmospheric and Oceanic Optics*. 16 (3), 232-236 (2003). (ISSN 1024-8560, E-ISSN 20700393, IF 0.87)
- 21) Diurnal variability of size-differentiated inorganic aerosols and their gas-phase precursors during January and February of 2003 in Mexico City. M. Moya, M. Grutter and A. Báez, *Atmospheric Environment*. 38 (33), 5651-5661 (2004). <https://doi.org/10.1016/j.atmosenv.2004.05.045> (ISSN 1352-2310, E-ISSN 1873-2844, IF 4.633)
- 22) Air pollution monitoring with two optical remote sensing techniques in Mexico City. M. Grutter and E. Flores, *SPIE*. 5571, 357-363 (2004). <https://doi.org/10.1117/12.565706> (ISSN 0277-786X, E-ISSN 1996-756X, IF 0.90)
- 23) Formaldehyde levels in downtown Mexico City during 2003. M. Grutter, E. Flores, G. Andraca-Ayala and A. Báez, *Atmospheric Environment*. 39 (6), 1027-1034 (2005). <https://doi.org/10.1016/j.atmosenv.2004.10.031> (ISSN 1352-2310, E-ISSN 1873-2844, IF 4.633)
- 24) Investigation of temperature and gas concentration distributions in hot exhausts (airplanes and burners) by scanning imaging FTIR spectrometry. E. Flores-Jardines, K. Schäfer, R. Harig, P. Rusch and M. Grutter, *SPIE*. 5979 (1A), 365-376 (2005). <https://doi.org/10.1117/12.627930> (ISSN 0277-786X, E-ISSN 1996-756X, IF 0.90)

- 25) Evolution of anthropogenic aerosols in the coastal town of Salina Cruz, Mexico: Part I Particle dynamics and land-sea interactions. D. Baumgardner, G. Raga, M. Grutter and G. Lammel, *Science of the Total Environment*. 367 (1), 288-301 (2006). <https://doi.org/10.1016/j.scitotenv.2005.11.013> (ISSN 0048-9697, E-ISSN 1879-1026, IF 6.419)
- 26) Technical note: Evaluation of standard ultraviolet absorption ozone monitors in a polluted urban environment. E.J. Dunlea, S.C. Herndon, D. D. Nelson, R.M. Volkamer, B.K. Lamb, E.J. Allwine, M. Grutter, C.R. Ramos Villegas, Claudia Marquez, S. Blanco, B. Cardenas, C.E. Kolb, L.T. Molina and M.J. Molina, *Atmos. Chem. Phys.* 6 (10), 3163-3180 (2006). <https://doi.org/10.5194/acp-6-3163-2006> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 27) Technical note: Analysis of non-regulated vehicular emissions in Mexico City by extractive FTIR spectrometry: Results on a hybrid car in Mexico City. F. Reyes, M. Grutter, A. Jazcilevich and R. González-Oropeza, *Atmos. Chem. Phys.* 6 (12), 5339-5346 (2006). <https://doi.org/10.5194/acp-6-5339-2006> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 28) Evolution of Anthropogenic Aerosols in the Coastal Town of Salina Cruz, Mexico: Part II Particle chemistry. D. Baumgardner, G. Raga, M. Grutter, G. Lammel and M. Moya, *Science of the Total Environment*, 372 (1), 287-298 (2006). <https://doi.org/10.1016/j.scitotenv.2006.08.044> (ISSN 0048-9697, E-ISSN 1879-1026, IF 6.419)
- 29) Implementation of a Markov Chain Monte Carlo method to inorganic aerosol modeling of observations from the MCMA-2003 campaign - Part I: Model description and application to the La Merced site. F. M. San Martini, E. J. Dunlea, M. Grutter, T. B. Onasch, J. T. Jayne, M. R. Canagaratna, D. R. Worsnop, C. E. Kolb, J. H. Shorter, S. C. Herndon, M. S. Zahniser, K. S. Johnson, J. M. Ortega, G. J. McRae, L. T. Molina, M. J. Molina, *Atmos. Chem. Phys.* 6 (12), 4867-4888 (2006). <https://doi.org/10.5194/acp-6-4867-2006> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 30) Ultraviolet aerosol optical properties retrieved during the 2006 MIRAGE-Mex experiment: initial results. T.E. Taylor, J. Slusser, A. Hernández, M. Grutter, B. Lefer, *SPIE*, 6362 (2006). <https://doi.org/10.1117/12.687942> (ISSN 0277-786X, E-ISSN 1996-756X, IF 0.90)
- 31) Distribution, magnitudes, reactivities, ratios and diurnal patterns of volatile organic compounds in the Valley of Mexico during the MCMA 2002 and 2003 field campaigns. E. Velasco, B. Lamb, H. Westberg, E. Allwine, G. Sosa, J.L. Arriaga-Colina, B.T. Jobson, M. Alexander, P. Prazeller, W.B. Knighton, T.M. Rogers, M. Grutter, S.C. Herndon, C. E. Kolb, M. Zavala, B. de Foy, R. Volkamer, L.T. Molina, and M.J. Molina, *Atmos. Chem. Phys.* 7 (2), 329-353 (2007). <https://doi.org/10.5194/acp-7-329-2007> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 32) A Vehicle Emissions System Using a Car Simulator and a Geographical Information System: Part 1—System Description and Testing. A.D. Jazcilevich, A. García-Fragoso, A. García-Reynoso, M. Grutter, U. Diego-Ayala, J. Lents, N. Davis, *J. Air & Waste Manag. Assoc.* 57 (10), 1234-1240 (2007). <https://doi.org/10.3155/1047-3289.57.10.1234> (ISSN 1096-2247, E-ISSN 2162-2906, IF 2.594)
- 33) Modeling constraints on the emission inventory and on vertical diffusion for CO and SO₂ in the Mexico City Metropolitan Area using Solar FTIR and zenith sky UV spectroscopy. B. de Foy, W. Lei, M. Zavala, R. Volkamer, J. Samuelsson, J. Mellqvist, B. Galle, A.-P. Martinez, M. Grutter, and L. T. Molina, *Atmos. Chem. Phys.* 7 (3), 781-801 (2007). <https://doi.org/10.5194/acp-7-781-2007> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 34) Evaluation of Nitrogen Dioxide Chemiluminescence Monitors in a Polluted Urban Environment. E.J. Dunlea, S.C. Herndon, D. D. Nelson, R.M. Volkamer, F. San Martin, P.W. Sheehy, M.S. Zahniser, J.H. Shorter, J.C. Wormhoudt, B.K. Lamb, E.J. Allwine, J.S. Gaffney, N.A. Marley, M. Grutter, C. Marquez, S. Blanco, B. Cardenas, A. Retama, C.R. Ramos-Villegas, C.E. Kolb, L.T. Molina and M.J. Molina, *Atmos. Chem. Phys.* 7 (10), 2691-2704 (2007). <https://doi.org/10.5194/acp-7-2691-2007> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)

- 35) Evaluación del riesgo por contaminantes criterio y formaldehído en la Ciudad de México. José Agustín García-Reynoso, Michel Grutter y Daniel Cintora-Juárez, *Rev. Int. Contam. Ambient.*, 23 (4), 169-175 (2007). (ISSN 0188-4999, IF 0.566)
- 36) Predicting Diurnal Variability of Fine Inorganic Aerosols and their Gas-Phase Precursors Near Downtown Mexico City. M. Moya, C. Fountoukis, A. Nenes, E. Matias and M. Grutter, *Atmos. Chem. Phys. Discuss.* 7, 11257-11294 (2007). <https://doi.org/10.5194/acpd-7-11257-2007> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 37) Higher excited electronic transitions of polyacetylene cations HC_2nH^+ $n=2-7$ in neon matrices. J. Fulara, M. Grutter and J.P. Maier, *J. Phys. Chem. A* 111 (46), 11831-11836 (2007). <https://doi.org/10.1021/jp075807t> (ISSN 1089-5639, E-ISSN 1520-5215, IF 2.6)
- 38) SO_2 emissions from Popocatepetl volcano: emission rates and plume imaging using optical remote sensing techniques. M. Grutter, R. Basaldud, C. Rivera, R. Harig, W. Junkerman, E. Caetano and H. Delgado-Granados, *Atmos. Chem. Phys.* 8 (22), 6655-6663 (2008). <https://doi.org/10.5194/acp-8-6655-2008> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 39) Detection of pollution transport events southeast of Mexico City using ground-based visible spectroscopy measurements of nitrogen dioxide. M.L. Melamed, R. Basaldud, L.G. Ruis-Suárez, S. Emais, R. Steinbrecher, and M. Grutter, *Atmos. Chem. Phys.* 9 (14), 4827-4840 (2009). <https://doi.org/10.5194/acp-9-4827-2009> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 40) Using ground-based solar and lunar infrared spectroscopy to study the diurnal trend of carbon monoxide in the Mexico City boundary layer. W. Stremme, I. Ortega-Martinez, and M. Grutter, *Atmos. Chem. Phys.* 9 (20), 8061-8078 (2009). <https://doi.org/10.5194/acp-9-8061-2009> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 41) Physical and chemical properties of the regional mixed layer of Mexico's Megapolis. Baumgardner, D., Grutter, M., Allan, J., Ochoa, C., Rappenglueck, B., Russell, L. M., and Arnott, P, *Atmos. Chem. Phys.* 9 (15), 5711-5727 (2009). <https://doi.org/10.5194/acp-9-5711-2009> (ISSN: 1680-7316, E-ISSN 1680-7324, IF 7.320)
- 42) Determination of mixing layer heights by ceilometer and influences upon air quality at Mexico City airport. Schäfer, K., Flores-Jardines, E., Emeis, S., Grutter, M., Kurtenbach, R., Wiesen, P., Münkel, C, *SPIE*. 7475, 24 (2009). <https://doi.org/10.1117/12.830425> (ISSN 0277-786X, E-ISSN 1996-756X, IF 0.90)
- 43) Global distribution and variability of formic acid as observed by MIPAS-ENVISAT. M. Grutter, N. Glatthor, G. P. Stiller, H. Fischer, U. Grabowski, M. Höpfner, S. Kellmann, A. Linden, and T. von Clarmann, *J. Geophys. Res.* 115, D10303 (2010). <https://doi.org/10.1029/2009JD012980> (ISSN 0148-0227, E-ISSN 2156-2202, IF)
- 44) Gas composition of Popocatepetl Volcano between 2007 and 2008: FTIR Spectroscopic measurements of an explosive event and during quiescent degassing. W. Stremme, I. Ortega, C. Siebe, M. Grutter, *Earth and Planetary Sciences Letters*. 301 (3-4), 502-510 (2011). <https://doi.org/10.1016/j.epsl.2010.11.032> (ISSN 0012-821X, E-ISSN 1385-013X, IF 5.273)
- 45) An evaluation of the hybrid car technology for the Mexico Mega City. A.D. Jazcilevich, A.R. García, M. Grutter, J. Delgado, U.A. Diego, M.L. Suárez, M. Zuk, R.O. González, J. Lents, N. Davis, *Journal of Power Sources*. 196 (13), 5704-5718 (2011). <https://doi.org/10.1016/j.jpowsour.2011.01.076> (ISSN 0378-7753, FI= 9.794; Q1)
- 46) Volcanic SO_2 and SiF_4 visualization using 2-D thermal emission spectroscopy - Part 1: slant-columns and their ratios. W. Stremme A. Krueger, R. Harig and M. Grutter, *Atmospheric Measurement Techniques*. 5 (2), 275-288 (2012). <https://doi.org/10.5194/amt-5-275-2012> (ISSN 1867-1381, E-ISSN 1867-8548, FI= 4.184; Q2)

- 47) Physical and chemical properties of the regional mixed layer of Mexico's Megapolis Part II: Evaluation of Measured and Modeled Trace Gases and Particle Size Distributions.
C. Ochoa, D. Baumgardner, M. Grutter, J. Allan, J. Fast, B. Rappengluck, *Atmos. Chem. Phys.* 12 (21), 10161-10179 (2012). <https://doi.org/10.5194/acp-12-10161-2012> (ISSN: 1680-7316, E-ISSN 1680-7324, FI=7.197; Q1)
- 48) Characterizing the Aging of Biomass Burning Organic Aerosol by Use of Mixing Ratios: A Meta-analysis of Four Regions. Matthew Jolleys, Hugh Coe, Gordon McFiggans, Gerard Capes, James Allan, Jonathan Crosier, Paul Ivor Williams, Grant Allen, Keith Bower, Jose Luis Jimenez, Lynn M Russell, Michel Grutter, and Darrel Baumgardner, *Environ. Sci. Technol.* 46 (24), 13093-13102 (2012). <https://doi.org/10.1021/es302386v> (ISSN 0013-936X, E-ISSN 1520-5851, FI= 11.357; Q1).
- 49) Meteorological Overview and Plume Transport Patterns during Cal-Mex 2010. Naifang Bei1, Guohui Li, Miguel Zavala, Hugo Barrera, Ricardo Torres, Michel Grutter, Wilfredo Gutiérrez, Manuel García, Luis Gerardo Ruiz-Suarez, Abraham Ortinez, Yaneth Guitierrez, Carlos Alvarado, Israel Flores, and Luisa T. Molina, *Atmospheric Environment*. 70, 477-489 (2013). <https://doi.org/10.1016/j.atmosenv.2012.01.065> (ISSN 1352-2310, E-ISSN 1873-2844, IF 4.633)
- 50) Volcanic SO₂ and SiF₄ visualization using 2-D thermal emission spectroscopy – Part 2: Wind propagation and emission rates. A. Krueger, W. Stremme, R. Harig and M. Grutter, *Atmospheric Measurement Techniques*. 6 (1), 47-61 (2013). <https://doi.org/10.5194/amt-6-47-2013> (ISSN 1867-1381, E-ISSN 1867-8548, FI= 4.184; Q2)
- 51) NO₂ fluxes from Tijuana using a mobile mini-DOAS during Cal-Mex 2010.
Claudia Rivera, Hugo Barrera, Michel Grutter, Miguel Zavala, Bo Galle, Naifang Bei, Guohui Li, Luisa T. Molina, *Atmospheric Environment*. 70, 532-539 (2013). <https://doi.org/10.1016/j.atmosenv.2012.12.026> (ISSN 1352-2310, E-ISSN 1873-2844, FI= 5.755; Q2)
- 52) Top-down estimation of the carbon monoxide emissions from the Mexico Megacity based on FTIR measurements from ground and space. W. Stremme, M. Grutter, C. Rivera, A.R. Garcia, I. Ortega, M. George, C. Clerbaux, P.-F. Coheur, D. Hurtmans, J.W. Hannigan, M.T. Coffey, *Atmos. Chem. Phys.* 13 (3), 1357-1376 (2013). <https://doi.org/10.5194/acp-13-1357-2013> (ISSN: 1680-7316, E-ISSN 1680-7324, IF=7.196, Q1)
- 53) Nitrogen dioxide DOAS measurements from ground and space: comparison of zenith scattered sunlight ground-based measurements and OMI data in Central Mexico. C. Rivera, W. Stremme and M. Grutter, *Atmósfera*. 26 (3), 401-414 (2013). (ISSN 0187-6236, E-ISSN 2395-8812, IF=2.063, Q4)
- 54) Solar absorption infrared spectroscopic measurements over Mexico City: Methane enhancements.
A. Bezanilla, A. Krueger, W. Stremme and M. Grutter, *Atmósfera*. 27 (2), 173-183 (2014). (ISSN 0187-6236, E-ISSN 2395-8812, IF=2.063, Q4)
- 55) Spatial distribution and transport patterns of NO₂ in the Tijuana – San Diego area.
Rivera, C., Stremme, W., Barrera, H., Friedrich, M., Grutter, M., García-Yee, J., Torres-Jardón, R., Ruiz-Suarez, L.G, *Atmospheric Pollution Research*. 6 (2), 230-238 (2015). <https://doi.org/10.5094/APR.2015.027> (ISSN: 1309-1042, IF=4.831, Q2)
- 56) The MAX-DOAS network in Mexico City to measure atmospheric pollutants.
Josué Arellano, Arne Krüger, Claudia Rivera, Wolfgang Stremme, Martina M. Friedrich, Alejandro Bezanilla, Michel Grutter, *Atmósfera*. 29 (2), 157-167 (2016). <https://doi.org/10.20937/ATM.2016.29.02.05> (ISSN 0187-6236, E-ISSN 2395-8812, IF=2.063, Q4)
- 57) Fostering a collaborative atmospheric chemistry research community in the Latin America and Caribbean Region. Andrade, M., N. Rojas, M. Melamed, O. Mayol-Bracero, M. Grutter, L. Dawidowski, J. Antuña-Marrero, C. Rudamas, L. Gallardo, R. Mamani-Paco, M. Andrade, and N. Huneus, *Bull. Amer. Meteor. Soc.* 97 (10), 1929-1939 (2016). <https://doi.org/10.1175/BAMS-D-14-00267.1> (ISSN 0003-0007, E-ISSN 1520-0477, IF=9.116), Q1

- 58) An evaluation of IASI-NH₃ with ground-based Fourier transform infrared spectroscopy measurements. E. Dammers, M. Palm, M. Van Damme, C. Vigouroux, D. Smale, S. Conway, G. C. Toon, N. Jones, E. Nussbaumer, T. Warneke, C. Petri, L. Clarisse, C. Clerbaux, C. Hermans, E. Lutsch, K. Strong, J. W. Hannigan, H. Nakajima, I. Morino, B. Herrera, W. Stremme, M. Grutter, M. Schaap, R. J. Wichink Kruit, J. Notholt, P.-F. Coheur and J.W. Erismann, *Atmos. Chem. Phys.* 16 (16), 10351-10368 (2016). <https://doi.org/10.5194/acp-16-10351-2016> (ISSN: 1680-7316, E-ISSN 1680-7324, IF=7.197, Q1)
- 59) First detection of ammonia (NH₃) in the Asian summer monsoon upper troposphere. Höpfner, M., Volkamer, R., Grabowski, U., Grutter, M., Orphal, J., Stiller, G., von Clarmann, T., and Wetzel, G., *Atmos. Chem. Phys.* 16 (22), 14357-14369 (2016). <https://doi.org/10.5194/acp-16-14357-2016> (ISSN: 1680-7316, E-ISSN 1680-7324, IF=7.197, Q1)
- 60) Tropospheric water vapour isotopologue data (H₂¹⁶O, H₂¹⁸O, and HD¹⁶O) as obtained from NDACC/FTIR solar absorption spectra. Barthlott, S., Schneider, M., Hase, F., Blumenstock, T., Kiel, M., Dubravica, D., García, O. E., Sepúlveda, E., Mengistu Tsidu, G., Takele Kenea, S., Grutter, M., Plaza-Medina, E. F., Stremme, W., Strong, K., Weaver, D., Palm, M., Warneke, T., Notholt, J., Mahieu, E., Servais, C., Jones, N., Griffith, D. W. T., Smale, D., and Robinson, J., *Earth Syst. Sci. Data.* 9 (1), 15-29 (2017). <https://doi.org/10.5194/essd-9-15-2017> (ISSN 1866-3508, E-ISSN 1866-3516, IF=11.815, Q1)
- 61) Tropospheric Emissions: Monitoring of Pollution (TEMPO). Zoogman, P., X. Liu, R.M. Suleiman, W.F. Pennington, D.E. Flittner, J.A. Al-Saadi, B.B. Hilton, D.K. Nicks, M.J. Newchurch, J.L. Carr, S.J. Janz, M.R. Andraschko, B.B. Baker, B.P. Canova, C. Chan Miller, R.C. Cohen, J.E. Davis, M.E. Dussault, D.P. Edwards, J. Fishman, G. González Abad, M. Grutter, J.R. Herman, J. Houck, D.J. Jacob, J. Joiner, B.J. Kerridge, J. Kim, N.A. Krotkov, R.V. Martin, C.T. McElroy, C. McLinden, V. Natraj, D.O. Neil, C.R. Nowlan, E.J. O'Sullivan, P.I. Palmer, M.R. Pippin, A. Saiz-Lopez, R.J.D. Spurr, J.J. Szykman, O.O. Torres, J.P. Veefkind, B. Veihelmann, H. Wang, J. Wang, A. Wulamu, K. Chance, *Journal of Quantitative Spectroscopy & Radiative Transfer.* 186, 17-39 (2017). <https://doi.org/10.1016/j.jqsrt.2016.05.008> (ISSN 0022-4073, IF=2.342, Q3)
- 62) Investigating differences in DOAS retrieval codes using MAD-CAT campaign data. Peters, E., Pinardi, G., Seyler, A., Richter, A., Wittrock, F., Bösch, T., Burrows, J. P., Van Roozendael, M., Hendrick, F., Drosoglou, T., Bais, A. F., Kanaya, Y., Zhao, X., Strong, K., Lampel, J., Volkamer, R., Koenig, T., Ortega, I., Piders, A., Puertedura, O., Navarro, M., Gómez, L., Yela González, M., Remmers, J., Wang, Y., Wagner, T., Wang, S., Saiz-Lopez, A., García-Nieto, D., Cuevas, C. A., Benavent, N., Querel, R., Johnston, P., Postlyakov, O., Borovski, A., Elokhov, A., Bruchkouski, I., Liu, C., Hong, Q., Liu, H., Rivera, C., Grutter, M., Stremme, W., Khokhar, M. F., and Khayyam, J., *Atmos. Meas. Tech.* 10 (3), 955-978 (2017). <https://doi.org/10.5194/amt-10-955-2017> (ISSN 1867-1381, E-ISSN 1867-8548, IF=4.184, Q2)
- 63) Background CO₂ levels and error analysis from ground-based solar absorption IR measurements in central Mexico. Baylon, J. L., Stremme, W., Grutter, M., Hase, F., and Blumenstock, T., *Atmos. Meas. Tech.* 10 (7), 2425-2434 (2017). <https://doi.org/10.5194/amt-10-2425-2017> (ISSN 1867-1381, E-ISSN 1867-8548, IF=4.184, Q2)
- 64) Ground-based remote sensing of O₃ by high and medium resolution FTIR spectrometers over the Mexico City basin. Plaza-Medina E.F., Stremme W., Bezanilla A., Grutter M., Schneider M., Hase F., and Blumenstock T., *Atmos. Meas. Tech.* 10 (7), 2703-2725, (2017). <https://doi.org/10.5194/amt-10-2703-2017> (ISSN 1867-1381, E-ISSN 1867-8548, IF=4.184, Q2)
- 65) Continuous measurements of SiF₄ and SO₂ by thermal emission spectroscopy: Insight from a 6-month survey at the Popocatepetl volcano. Taquet N., Meza-Hernández I., Stremme W., Bezanilla A., Grutter M., Campion R., Palm M., Boulesteix T., *Journal of Volcanology and Geothermal Research.* 341, 255-68, (2017). <https://doi.org/10.1016/j.jvolgeores.2017.05.009> (ISSN 0377-0273, IF=2.986, Q3)
- 66) Validation of the CrIS Fast Physical NH₃ Retrieval with ground-based FTIR.

- Dammers E., Shephard M., Palm M., Cady-Pereira K., Capps S., Lutsch E., Strong K., Hannigan J., Toon G., Stremme W., Grutter M., Jones N., Smale D., Siemons J., Hrpcek K., Tremblay D., Schaap M., Notholt J., and Willem-Erisman J. *Atmos. Meas. Tech.* 10 (7), 2645-2667 (2017). <https://doi.org/10.5194/amt-10-2645-2017> (ISSN 1867-1381, E-ISSN 1867-8548, IF=4.184, Q2)
- 67) Comparison of the GOSAT TANSO-FTS TIR CH₄ volume mixing ratio vertical profiles with those measured by ACE-FTS, ESA MIPAS, IMK-IAA MIPAS, and 16 NDACC stations.
Olsen, K. S., Strong, K., Walker, K. A., Boone, C. D., Raspollini, P., Plieninger, J., Bader, W., Conway, S., Grutter, M., Hannigan, J. W., Hase, F., Jones, N., de Mazière, M., Notholt, J., Schneider, M., Smale, D., Sussmann, R., and Saitoh, N., *Atmos. Meas. Tech.* 10 (10), 3697-3718 (2017). <https://doi.org/10.5194/amt-10-3697-2017> (ISSN 1867-1381, E-ISSN 1867-8548, IF=4.184, Q2)
- 68) In situ biomonitoring of air quality in rural and urban environments of Mexico Valley through genotoxicity evaluated in wild plants.
Gómez-Arroyo, S.; Cortés-Eslava, J.; Loza-Gómez, P.; Arenas-Huertero, F.; Grutter de la Mora, M.; Morton Bermea, O., *Atmospheric Pollution Research.* 9 (1), 119-125 (2018). <https://doi.org/10.1016/j.apr.2017.06.009> (ISSN 1309-1042, IF=4.831, Q2)
- 69) Indicators of environmental contamination by heavy metals in leaves of *Taraxacum officinale* in two zones of the metropolitan area of Mexico City. Gómez-Arroyo, S., Barba-García, A., Arenas-Huertero, F., Cortés-Eslava, J. Grutter, M., García-Martínez, R. *Environ Sci Pollut Res.* (2018) 25: 4739. <https://doi.org/10.1007/s11356-017-0809-1> (ISSN: 0944-1344, IF=5.19, Q2)
- 70) Variability of the Mixed-Layer Height Over Mexico City. J. L. García-Franco, W. Stremme, A. Bezanilla, A. Ruiz-Angulo, M. Grutter *Boundary-Layer Meteorol.* 167 (3), 493-507 (2018). <https://doi.org/10.1007/s10546-018-0334-x> (ISSN 0006-8314, E-ISSN 1573-1472, IF=3.471, Q3)
- 71) NDACC harmonized formaldehyde time series from 21 FTIR stations covering a wide range of column abundances. Vigouroux, C., Bauer Aquino, C. A., Bauwens, M., Becker, C., Blumenstock, T., De Mazière, M., García, O., Grutter, M., Guarín, C., Hannigan, J., Hase, F., Jones, N., Kivi, R., Koshelev, D., Langerock, B., Lutsch, E., Makarova, M., Metzger, J.-M., Müller, J.-F., Notholt, J., Ortega, I., Palm, M., Paton-Walsh, C., Poberovskii, A., Rettinger, M., Robinson, J., Smale, D., Stavrou, T., Stremme, W., Strong, K., Sussmann, R., Té, Y., and Toon, G., *Atmos. Meas. Tech.* 11 (9), 5049-5073 (2018). <https://doi.org/10.5194/amt-11-5049-2018> (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 72) Mapping carbon monoxide pollution from space down to city scales with daily global coverage.
Borsdorff, T., van de Brugh, J., Hu, H., Hasekamp, O., Sussmann, R., Rettinger, M., Hase, F., Gross, J., Schneider, M., Garcia, O., Stremme, W., Grutter, M., Feist, D. G., Arnold, S. G., De Mazière, M., Kumar Sha, M., Pollard, D. F., Kiel, M., Roehl, C., Wennberg, P. O., Toon, G. C., and Landgraf, J., *Atmos. Meas. Tech.* 11 (10), 5507-5518 (2018). <https://doi.org/10.5194/amt-11-5507-2018> (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 73) A low-cost long-term model of coastal observatories of global change, *Journal of Operational Oceanography*. Joan-Albert Sanchez-Cabeza, León Felipe Álvarez Sánchez, José Gilberto Cardoso-Mohedano, Edgar Escalante Mancera, Misael Díaz-Asencio, Hugo López-Rosas, Maria Luisa Machain-Castillo, Martín Merino-Ibarra, Ana Carolina Ruiz-Fernández, Rosalba Alonso-Rodríguez, Mario Alejandro Gómez-Ponce, Enrique Ávila, Serguei Rico-Esenaro, Miguel Ángel Gómez-Realí, Carlos Alberto Herrera-Becerril & Michel Grutter, *Journal of Operational Oceanography*. 12 (1), 34-46 (2019). <https://doi.org/10.1080/1755876X.2018.1533723> (ISSN 1755-876X, E-ISSN 1755-8778, IF=4.208, Q2)
- 74) Characterization of a UV camera system for SO₂ measurements from Popocatepetl Volcano.
B. Schiavo, W. Stremme, M. Grutter, R. Campion, C.A. Guarín, C. Rivera, S. Inguaggiato, *Journal of Volcanology and Geothermal Research.* 370, 82-94 (2019). <https://doi.org/10.1016/j.jvolgeores.2018.09.001> (ISSN 0377-0273, IF=2.899, Q3)

- 75) Building the COllaborative Carbon Column Observing Network (COCCON): long-term stability and ensemble performance of the EM27/SUN Fourier transform spectrometer.
Frey, M., Sha, M. K., Hase, F., Kiel, M., Blumenstock, T., Harig, R., Surawicz, G., Deutscher, N. M., Shiomi, K., Franklin, J. E., Bösch, H., Chen, J., Grutter, M., Ohyama, H., Sun, Y., Butz, A., Mengistu Tsidu, G., Ene, D., Wunch, D., Cao, Z., Garcia, O., Ramonet, M., Vogel, F., and Orphal, J., *Atmos. Meas. Tech.* 12 (3), 1513-1530 (2019). <https://doi.org/10.5194/amt-12-1513-2019> (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 76) NO₂ vertical profiles and column densities from MAX-DOAS measurements in Mexico City.
Friedrich, M. M., Rivera, C., Stremme, W., Ojeda, Z., Arellano, J., Bezanilla, A., García-Reynoso, J. A., and Grutter, M., *Atmos. Meas. Tech.* 12 (4), 2545-2565 (2019). <https://doi.org/10.5194/amt-12-2545-2019> (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 77) Variability in the Gas Composition of the Popocatepetl Volcanic Plume.
Taquet N, Stremme W, Grutter M, Baylón J, Bezanilla A, Schiavo B, Rivera C, Campion R, Boulesteix T, Nieto-Torres A, Espinasa-Pereña R, Blumenstock T and Hase F., *Front. Earth Sci.* 7, 114 (2019). <https://doi.org/10.3389/feart.2019.00114> (ISSN 2095-0195, E-ISSN 2095-0209, IF=3.661, Q2)
- 78) TEMPO Green Paper: Chemistry, physics, and meteorology experiments with the Tropospheric Emissions: monitoring of pollution instrument.
K. Chance, X. Liu, C. Chan Miller, G. González Abad, G. Huang, C. Nowlan, A. Souri, R. Suleiman, K. Sun, H. Wang, L. Zhu, P. Zoogman, J. Al-Saadi, J. -C. Antuña-Marrero, J. Carr, R. Chatfield, M. Chin, R. Cohen, D. Edwards, J. Fishman, D. Flittner, J. Geddes, M. Grutter, J. R. Herman, D. J. Jacob, S. Janz, J. Joiner, J. Kim, N. A. Krotkov, B. Lefer, R. V. Martin, O. L. Mayol-Bracero, A. Naeger, M. Newchurch, G. G. Pfister, K. Pickering, R. B. Pierce, C. Rivera Cárdenas, A. Saiz-Lopez, W. Simpson, E. Spinei, R. J. D. Spurr, J. J. Szykman, O. Torres, J. Wang, *Proc., SPIE*, 11151 (2019). <https://doi.org/10.1117/12.2534883> (ISSN 0277-786X, E-ISSN 1996-756X, IF 0.90)
- 79) TROPOMI/S5P formaldehyde validation using an extensive network of ground-based FTIR stations. Vigouroux, C., Langerock, B., Bauer Aquino, C. A., Blumenstock, T., Cheng, Z., De Mazière, M., De Smedt, I., Grutter, M., Hannigan, J. W., Jones, N., Kivi, R., Loyola, D., Lutsch, E., Mahieu, E., Makarova, M., Metzger, J.-M., Morino, I., Murata, I., Nagahama, T., Notholt, J., Ortega, I., Palm, M., Pinardi, G., Röhlings, A., Smale, D., Stremme, W., Strong, K., Sussmann, R., Té, Y., van Roozendael, M., Wang, P., and Winkler, H.: TROPOMI–Sentinel-5 Precursor formaldehyde validation using an extensive network of ground-based Fourier-transform infrared stations, *Atmos. Meas. Tech.*, 13, 3751–3767, <https://doi.org/10.5194/amt-13-3751-2020>, 2020. (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 80) Monitoring CO emissions of the metropolis Mexico City using TROPOMI CO observations. Borsdorff, T., García Reynoso, A., Maldonado, G., Mar-Morales, B., Stremme, W., Grutter, M., and Landgraf, J.: *Atmos. Chem. Phys.*, 20, 15761–15774, <https://doi.org/10.5194/acp-20-15761-2020>, 2020. (ISSN: 1680-7316, E-ISSN 1680-7324, IF=7.197, Q1)
- 81) Ground-based validation of the Copernicus Sentinel-5p TROPOMI NO₂ measurements with the NDACC ZSL-DOAS, MAX-DOAS and Pandonia global networks. Verhoelst, T., Compernelle, S., Pinardi, G., Lambert, J.-C., Eskes, H. J., Eichmann, K.-U., Fjæraa, A. M., Granville, J., Niemeijer, S., Cede, A., Tiefengraber, M., Hendrick, F., Pazmiño, A., Bais, A., Bazureau, A., Boersma, K. F., Bogner, K., Dehn, A., Donner, S., Elokhov, A., Gebetsberger, M., Goutail, F., Grutter de la Mora, M., Gruzdev, A., Gratsea, M., Hansen, G. H., Irie, H., Jepsen, N., Kanaya, Y., Karagkiozidis, D., Kivi, R., Kreher, K., Levelt, P. F., Liu, C., Müller, M., Navarro Comas, M., Piders, A. J. M., Pommereau, J.-P., Portafax, T., Puertedura, O., Querel, R., Remmers, J., Richter, A., Rimmer, J., Rivera Cárdenas, C., Saavedra de Miguel, L., Sinyakov, V. P., Strong, K., Van Roozendael, M., Veefkind, J. P., Wagner, T., Wittrock, F., Yela González, M., and Zehner, C.: *Atmos. Meas. Tech.*, 14, 481–510, 2021. <https://doi.org/10.5194/amt-14-481-2021>, (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 82) Formaldehyde total column densities over Mexico City: comparison between multi-axis differential optical absorption spectroscopy and solar-absorption Fourier transform infrared measurements. Rivera Cárdenas, C.,

- Guarín, C., Stremme, W., Friedrich, M. M., Bezanilla, A., Rivera Ramos, D., Mendoza-Rodríguez, C. A., Grutter, M., Blumenstock, T., and Hase, F. *Atmos. Meas. Tech.*, 14, 595–613, <https://doi.org/10.5194/amt-14-595-2021>, 2021. (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 83) Characterisation and potential for reducing optical resonances in FTIR spectrometers of the Network for the Detection of Atmospheric Composition Change (NDACC). Blumenstock, T., Hase, F., Keens, A., Czurlok, D., Colebatch, O., Garcia, O., Griffith, D. W. T., Grutter, M., Hannigan, J. W., Heikkinen, P., Jeseck, P., Jones, N., Kivi, R., Lutsch, E., Makarova, M., Imhasin, H. K., Mellqvist, J., Morino, I., Nagahama, T., Notholt, J., Ortega, I., Palm, M., Raffalski, U., Rettinger, M., Robinson, J., Schneider, M., Servais, C., Smale, D., Stremme, W., Strong, K., Sussmann, R., Té, Y., and Velazco, V. A. *Atmos. Meas. Tech.*, 14, 1239–1252, <https://doi.org/10.5194/amt-14-1239-2021>, 2021. (ISSN 1867-1381, eISSN 1867-8548, IF=4.184, Q2)
- 84) Evaluation of OMI NO₂ Vertical Columns Using MAX-DOAS Observations over Mexico City. Ojeda Lerma, Z.; Rivera Cardenas, C.; Friedrich, M.M.; Stremme, W.; Bezanilla, A.; Arellano, E.J.; Grutter, M. *Remote Sens.* 2021, 13, 761, <https://doi.org/10.3390/rs13040761>, 2021. (ISSN 2072-4292, IF= 5.349, Q1)
- 85) New observations of NO₂ in the upper troposphere from TROPOMI. Marais, E. A., Roberts, J. F., Ryan, R. G., Eskes, H., Boersma, K. F., Choi, S., Joiner, J., Abuhassan, N., Redondas, A., Grutter, M., Cede, A., Gomez, L., and Navarro-Comas, M. *Atmos. Meas. Tech.*, 14, 2389–2408, <https://doi.org/10.5194/amt-14-2389-2021>, 2021. (ISSN 1867-1381, eISSN 1867-8548, IF 4.184, Q2)
- 86) Impact of the COVID-19 Lockdown on Air Quality and Resulting Public Health Benefits in the Mexico City Metropolitan Area. Hernández-Paniagua Iván Y., Valdez S. Ivvan, Almanza Victor, Rivera-Cárdenas Claudia, Grutter Michel, Stremme Wolfgang, García-Reynoso Agustín, Ruiz-Suárez Luis Gerardo. *Frontiers in Public Health*, 9, 2021. <https://doi.org/10.3389/fpubh.2021.642630> (ISSN=2296-2565, IF=6.461, Q1)
- 87) Temporal variations of black carbon, carbon monoxide, and carbon dioxide in Mexico City: Mutual correlations and evaluation of emissions inventories. Rafael N. Liñan-Abanto, D. Salcedo, P. Arnott, G. Paredes-Miranda, M. Grutter, O. Peralta, G. Carabali, N. Serrano-Silva, L.G. Ruiz-Suarez, T. Castro. *Urban Climate* 37, 2021. <https://doi.org/10.1016/j.uclim.2021.100855> (ISSN 2212-0955, IF 6.663, Q1)
- 88) Validation of Methane and Carbon Monoxide from Sentinel-5 Precursor using TCCON and NDACC-IRWG stations. Sha, M. K., Langerock, B., Blavier, J.-F. L., Blumenstock, T., Borsdorff, T., Buschmann, M., Dehn, A., De Mazière, M., Deutscher, N. M., Feist, D. G., García, O. E., Griffith, D. W. T., Grutter, M., Hannigan, J. W., Hase, F., Heikkinen, P., Hermans, C., Iraci, L. T., Jeseck, P., Jones, N., Kivi, R., Kumps, N., Landgraf, J., Lorente, A., Mahieu, E., Makarova, M. V., Mellqvist, J., Metzger, J.-M., Morino, I., Nagahama, T., Notholt, J., Ohyama, H., Ortega, I., Palm, M., Petri, C., Pollard, D. F., Rettinger, M., Robinson, J., Roche, S., Roehl, C. M., Röhlting, A. N., Rousogonous, C., Schneider, M., Shiomi, K., Smale, D., Stremme, W., Strong, K., Sussmann, R., Té, Y., Uchino, O., Velazco, V. A., Vrekoussis, M., Wang, P., Warneke, T., Wizenberg, T., Wunch, D., Yamanouchi, S., Yang, Y., and Zhou, M. *Atmos. Meas. Tech.*, 14, 6249–6304, 2021. <https://doi.org/10.5194/amt-14-6249-2021> (ISSN 1867-1381, eISSN 1867-8548, IF 4.184, Q2)
- 89) Characterization of aerosol particles during a high pollution episode over Mexico City. Carabali G., Villanueva-Macias J., Ladino L.A., Álvarez-Ospina H., Raga G.B., Andraca-Ayala G.L., Miranda J., Grutter M., and Silva M. *Scientific Reports*. 11, 22533 (2021). <https://doi.org/10.1038/s41598-021-01873-4> (ISSN: 2045-2322, IP: 4.996, Q2)
- 90) CO₂ variability in the Mexico City region from in situ measurements at an urban and a background site. Eugenia González del Castillo, Noémie Taquet, Alejandro Bezanilla, Wolfgang Stremme, Michel Ramonet, Olivier Laurent, Yang Xu, Marc Delmotte, and Michel Grutter. *Atmósfera*. 35(2), p 377-393, 2022. <https://doi.org/10.20937/ATM.52956> (ISSN 2395-8812, IF 2.063, Q4)
- 91) Global Atmospheric OCS Trend Analysis from 22 NDACC Stations. James W. Hannigan, Ivan Ortega, Shima Bahramvash Shams, Thomas Blumenstock, Elliott Campbell, Stephanie Conway, Victoria Flood, Omaira García,

- Michel Grutter, Frank Hase, Pascal Jeseck, Nicholas Jones, Emmanuel Mahieu, Maria Makarova, Martine De Maziere, Isamu Morino, Isao Murata, Toomo Nagahama, Hideaki Nakijima, Justus Notholt, Mathias Palm1, Anatoliy Poberovskii, Markus Rettinger1, John Robinson, Amelie N. Rohling, Matthias Schneider, Christian Servais, Dan Smale1, Wolfgang Stremme, Kimberly Strong, Ralf Sussmann, Yao TE, Corinne Vigouroux, Tyler Wizenberg. *JGR: Atmospheres*. 127(4), 2022. <https://doi.org/10.1029/2021JD035764> (ISSN: 2169-8996, IF: 5.217; Q1)
- 92) Improved calibration procedures for the EM27/SUN spectrometers of the Collaborative Carbon Column Observing Network (COCCON). Alberti, C., Hase, F., Frey, M., Dubravica, D., Blumenstock, T., Dehn, A., Castracane, P., Surawicz, G., Harig, R., Baier, B. C., Bès, C., Bi, J., Boesch, H., Butz, A., Cai, Z., Chen, J., Crowell, S. M., Deutscher, N. M., Ene, D., Franklin, J. E., García, O., Griffith, D., Grouiez, B., Grutter, M., Hamdouni, A., Houweling, S., Humpage, N., Jacobs, N., Jeong, S., Joly, L., Jones, N. B., Jouget, D., Kivi, R., Kleinschek, R., Lopez, M., Medeiros, D. J., Morino, I., Mostafavipak, N., Müller, A., Ohyama, H., Palmer, P. I., Pathakoti, M., Pollard, D. F., Raffalski, U., Ramonet, M., Ramsay, R., Sha, M. K., Shiomi, K., Simpson, W., Stremme, W., Sun, Y., Tanimoto, H., Té, Y., Tsidu, G. M., Velazco, V. A., Vogel, F., Watanabe, M., Wei, C., Wunch, D., Yamasoe, M., Zhang, L., and Orphal, J. *Atmos. Meas. Tech.*, 15, 2433–2463, <https://doi.org/10.5194/amt-15-2433-2022>, 2022. (ISSN 1867-1381, eISSN 1867-8548, IF 4.473)
- 93) Variability of water vapor in Central Mexico from two remote sensing techniques: FTIR spectroscopy and GPS. Alain Zuber; Wolfgang Stremme; Michel Grutter; David Adams; Thomas Blumenstock; Frank Hase; Claudia Rivera; Noemie Taquet; Alejandro Bezanilla. *Journal of Atmospheric and Oceanic Technology* 39(8). 2022. <https://doi.org/10.1175/JTECH-D-20-0192.1> (ISSN: 0739-0572; eISSN: 1520-0426. IF: 2.531; Q3)
- 94) Reconciliation of asynchronous satellite-based NO₂ and XCO₂ enhancements with mesoscale modeling over two urban landscapes. R. Lei, S. Feng, Y. Xu, S. Tran, M. Ramonet, A. Karion, S. Gourdji, K. Mueller, M. Grutter, A. Garcia, M. Campos-Pineda, T. Lauvaux. *Remote Sensing of Environment*. 281, 113241 (2022). <https://doi.org/10.1016/j.rse.2022.113241> (ISSN: 0034-4257, eISSN: 1879-0704).
- 95) Evolution and distribution of NH₃ over Mexico City from ground-based and satellite infrared spectroscopic measurements. Beatriz Herrera, Alejandro Bezanilla, Thomas Blumenstock, Enrico Dammers, Frank Hase, Lieven Clarisse, Adolfo Magaldi, Claudia Rivera, Wolfgang Stremme, Kimberly Strong, Camille Viatte, Martin Van Damme, and Michel Grutter. *Atmospheric Chemistry and Physics*. 22, 14119–14132 (2022). <https://doi.org/10.5194/acp-2022-217> (ISSN: IF:)
- 96) NH₃ spatiotemporal variability over Paris, Mexico City, and Toronto, and its link to PM_{2.5} during pollution events. Viatte, C., Abeed, R., Yamanouchi, S., Porter, W. C., Safieddine, S., Van Damme, M., Clarisse, L., Herrera, B., Grutter, M., Coheur, P.-F., Strong, K., and Clerbaux, C. *Atmos. Chem. Phys.*, 22, 12907–12922, <https://doi.org/10.5194/acp-22-12907-2022>, 2022.
- 97) Prediction of daily mean and one-hour maximum PM_{2.5} concentrations and applications in Central Mexico using satellite-based machine-learning models. Iván Gutiérrez-Avila, Kodi B. Arfer, Daniel Carrión, Johnathan Rush, Itai Kloog, Aaron R. Naeger, Michel Grutter, Víctor Hugo Páramo-Figueroa, Horacio Riojas-Rodríguez and Allan C. Just. *Journal of Exposure Science and Environmental Epidemiology*. 2022 Sep 10. <http://doi.org/10.1038/s41370-022-00471-4>. (ISSN: 1559-0631, IF:5.385)
- 98) Boundary Layer Height Characteristics in Mexico City from Two Remote Sensing Techniques, Andrea Burgos-Cuevas, Adolfo Magaldi-Hermosillo, David K. Adams, Michel Grutter, Jorge L. García Franco, Angel Ruiz-Angulo. *Boundary-Layer Meteorology*. 186, pages 287–304 (2023). <https://doi.org/10.1007/s10546-022-00759-w>
- 99) Validation of OMPS Suomi NPP and OMPS NOAA-20 Formaldehyde Total Columns with NDACC FTIR Observations. Kwon H.-A., G. González Abad, C. R. Nowlan, H. Chong, A. H. Souri, C. Vigouroux, A. Röhling, R. Kivi, M. Makarova, J. Notholt, M. Palm, H. Winkler, Y. Té, R. Sussmann, M. Rettinger, E. Mahieu, K. Strong, E. Lutsch, S. Yamanouchi, T. Nagahama, J. W. Hannigan, M. Zhou, I. Murata, M. Grutter, W. Stremme, M. De

- Mazière, N. Jones, D. Smale, I. Morino. *Earth and Space Science*, 10, e2022EA002778 (2023). <https://doi.org/10.1029/2022EA002778>. (ISSN:2333-5084; FI: 3.1)
- 100) Combined direct-sun ultraviolet and infrared spectroscopies at Popocatepetl volcano (Mexico). Taquet N., Rivera Cárdenas C., Stremme W., Boulesteix T., Bezanilla A., Grutter M., García O., Hase F., Blumenstock T. *Frontiers in Earth Science*. 11 (2023). (ISSN=2296-6463) <https://www.frontiersin.org/articles/10.3389/feart.2023.1062699>
- 101) Direct solar FTIR measurements of CO₂ and HCl in the plume of Popocatepetl Volcano, Mexico. Stremme Wolfgang, Grutter Michel, Baylón Jorge, Taquet Noemie, Bezanilla Alejandro, Plaza-Medina Eddy, Schiavo Benedetto, Rivera Claudia, Blumenstock Thomas, Hase Frank. *Frontiers in Earth Science*. 11 (2023). (ISSN=2296-6463) <https://www.frontiersin.org/articles/10.3389/feart.2023.1022976>
- 102) Elemental Characterization of Ambient Particulate Matter for a Globally Distributed Monitoring Network: Methodology and Implications. Xuan Liu, Jay R. Turner, Christopher R. Oxford, Jacob McNeill, Brenna Walsh, Emmie Le Roy, Crystal L. Weagle, Emily Stone, Haihui Zhu, Wenyu Liu, Zilin Wei, Nicole P. Hyslop, Jason Giacomo, Ann M. Dillner, Abdus Salam, Al-amin Hossen, Zubayer Islam, Ihab Abboud, Clement Akoshile, Omar Amador-Muñoz, Nguyen Xuan Anh, Araya Asfaw, Rajasekhar Balasubramanian, Rachel Ying-Wen Chang, Craig Coburn, Sagnik Dey, David J. Diner, Jinlu Dong, Tareq Farrah, Paterné Gahungu, Rebecca M. Garland, Michel Grutter de la Mora, Sina Hasheminassab, Juanette John, Jhoon Kim, Jong Sung Kim, Kristy Langerman, Pei-Chen Lee, Puji Lestari, Yang Liu, Tesfaye Mamo, Mathieu Martins, Olga L. Mayol-Bracero, Mogesh Naidoo, Sang Seo Park, Yoav Schechner, Robyn Schofield, Sachchida N. Tripathi, Eli Windwer, Ming-Tsang Wu, Qiang Zhang, Michael Brauer, Yinon Rudich, and Randall V. Martin. *ACS ES&T Air*. 1, p283-293. 2024. <https://doi.org/10.1021/acsestair.3c00069>
- 103) Bias characterization of OMI HCHO columns based on FTIR and aircraft measurements and impact on top-down emission estimates. Müller, J.-F., Stavrakou, T., Oomen, G.-M., Opacka, B., De Smedt, I., Guenther, A., Vigouroux, C., Langerock, B., Aquino, C. A. B., Grutter, M., Hannigan, J., Hase, F., Kivi, R., Lutsch, E., Mahieu, E., Makarova, M., Metzger, J.-M., Morino, I., Murata, I., Nagahama, T., Notholt, J., Ortega, I., Palm, M., Röhling, A., Stremme, W., Strong, K., Sussmann, R., Té, Y., and Fried, A.. *Atmos. Chem. Phys.*, 24, 2207–2237, 2024. <https://doi.org/10.5194/acp-24-2207-2024>
- 104) Urban XCO₂ gradients from a dense network of solar absorption spectrometers and OCO-3 over Mexico City. Che, K., Lauvaux, T., Taquet, N., Stremme, W., Xu, Y., Alberti, C., Morgan Lopez, Agustín García-Reynoso, Philippe Ciais, Yi Liu, Michel Ramonet, Michel Grutter. (2024). *Journal of Geophysical Research: Atmospheres*, 129, e2023JD040063. <https://doi.org/10.1029/2023JD040063>
- 105) CO₂ and CO temporal variability over Mexico City from ground-based total column and surface measurements. Noémie Taquet, Wolfgang Stremme, María Eugenia González del Castillo, Victor Almanza, Alejandro Bezanilla, Olivier Laurent, Carlos Alberti, Frank Hase, Michel Ramonet, Thomas Lauvaux, Ke Che, Michel Grutter. *Atmos. Chem. Phys.* 2024. En prensa. <https://doi.org/10.5194/egusphere-2024-512>
- 106) CO₂ emissions estimate from Mexico City using ground- and space-based remote sensing. Ke Che, Thomas Lauvaux, Noemie Taquet, Wolfgang Stremme, Yang Xu, Carlos Alberti, Morgan Lopez, Agustín García-Reynoso, Philippe Ciais, Yi Liu, Michel Ramonet. *Journal of Geophysical Research: Atmospheres*. Vol. 129, Issue 20. 2024. <https://doi.org/10.1029/2024JD041297>.
- 107) Fiducial Reference Measurements for Greenhouse Gases (FRM4GHG): Validation of Satellite (Sentinel-5 Precursor, OCO-2, and GOSAT) Missions Using the COllaborative Carbon Column Observing Network (COCCON). Sha, M.K.; Das, S.; Frey, M.M.; Dubravica, D.; Alberti, C.; Baier, B.C.; Balis, D.; Bezanilla, A.; Blumenstock, T.; Boesch, H.; Cai, Z.; Chen, J.; Dandoci, A.; Mazière, M.D.; Foka, S.; García, O.; Gillespie, L.D.; Gribanov, K.; Gross, J.; Grutter, M.; Handley, P.; Hase, F.; Heikkinen, P.; Humpage, N.; Jacobs, N.; Jeong, S.; Karppinen, T.; Kiel, M.; Kivi, R.; Langerock, B.; Laughner, J.; Lopez, M.; Makarova, M.; Mermigkas, M.; Morino, I.; Mostafavipak, N.; Nemuc, A.; Newberger, T.; Ohyama, H.; Okello, W.; Osterman, G.; Park, H.; Pirloaga, R.; Pollard, D.F.; Raffalski, U.; Ramonet, M.; Sepúlveda, E.; Simpson, W.R.; Stremme, W.; Sweeney, C.; Taquet, N.;

- Topaloglou, C.; Tu, Q.; Warneke, T.; Wunch, D.; Zakharov, V.; Zhou, M. *Remote Sens.* 2025, 17, 734. <https://doi.org/10.3390/rs17050734>.
- 108) Geostationary Satellites Total Ozone Observations: First Results and Ground-based Validation Efforts for TEMPO and GEMS. Xiaoyi Zhao, Debora Griffin, Vitali Fioletov, Chris McLinden, Xiong Liu, Junsung Park, Irina Petropavlovskikh, Thomas F. Hanisco, James Szykman, Lukas Valin, Eric Baumann, Alexander Cede5, Martin Tiefengraber, Manuel Gebetsberger, Itaru Uesato, Xiangdong Zheng, Soi Ahn, Limseok Chang, Won-Jin Lee, Jae Hwan Kim, Hyunjin Lee, Kanghyun Baek, Alberto Redondas, Masatomo Fujiwara, Ting Wang, Michel Grutter, and Sum Chi Lee. *Geophysical Research Letters*. 2025. <https://10.1029/2025GL114768>. Aceptado.
- 109) Black Carbon Emissions Generally Underestimated in the Global South as Revealed by Globally Distributed Measurements. Yuxuan Ren, Christopher R. Oxford, Dandan Zhang, Xuan Liu, Haihui Zhu, Ann M. Dillner, Warren H. White, Rajan K. Chakrabarty, Sina Hasheminassab, David Diner, Emmie Le Roy, Joshin Kumar, Valerie Viteri, Keyao Song, Clement Akoshile, Omar Amador-Muñoz, Araya Asfaw, Rachel Ying-Wen Chang, Diana Francis, Patern Gahungu, Rebecca M. Garland, Michel Grutter, Jhoon Kim1, Kristy Langerman, Pei-Chen Lee, Puji Lestari, Olga L. Mayol-Bracero, Mogesh Naidoo, Narendra Nelli, Norman O'Neill, Sang Seo Park, Abdus Salam, Bighnaraj Sarangi, Yoav Schechner, Robyn Schofield, Sachchida N. Tripathi, Eli Windwer, Ming-Tsang Wu, Qiang Zhang, Yinon Rudich, Michael Brauer, and Randall V. Martin. *Nature Communications* (2025). <https://doi.org/10.21203/rs.3.rs-6024974/v1>. Aceptado.
- 110) Comparing v11.2 OCO-2 and v11 OCO-3 XCO₂ Retrievals with Ground-Based COCCON Measurements. Saswati Das et al. (2025) *Earth and Space Science*. Submitted
- 111) Identifying trend reversals in atmospheric ethane from a multi-site analysis. Marina Friedrich; Siem Jan Koopman; Yicong Lin; Emmanuel Mahieu; Stephan Smeekes; Martine De Mazière; Victoria Flood; Matthias Frey; Michel Grutter; James Hannigan; Frank Hase; Nicholas Jones; Rigel Kivi; Maria Makarova; Isamu Morino; Isao Murata; Tomooma Nagaha; Justus Notholt; Ivan Ortega; Maxime Prignon; Amelie Röhlhng; Dan Smale; Kimberly Strong; Yao Té; Minqiang Zhou. 2025. *Climatic Change*. Enviado
- 112) NH₃ variability and trends from FTIR ground-based measurements and model simulations globally distributed. B. Herrera, E. Damers, M. De Maziere, O.E. Garcia, M. Grutter, J. W. Hannigan, D. B. J. Jones, N. Jones, E. Mahieu, M. Makarova, K. Miyazaki, I. Morino, I. Murata, I. Ortega, M. Palm, A. Poberovskii, D. Smale, H. Still, W. Stremme, R. Sussmann, C. Vigouroux, W. Wang, T. Wizenberg, K. Strong. 2025. En preparación.