FIVE MOST IMPORTANT JOURNAL PUBLICATIONS


Description: Novel measurement concept and foundation for monitoring urban greenhouse gas emissions.


Description: The worldwide first study that quantifies the methane emission of a large festival.


Description: First CFD simulation results of CO$_2$ dispersion from an urban power plant: column concentration mapping with unprecedented high spatial resolution.


Description: Novel method for data fusion / spatiotemporal prediction and its first time application for satellite measurements of GHGs. Concept published as a book in Springer Nature.


Description: This innovative sensor concept resulted in the first VCSEL-based CO sensor worldwide, awarded with the Kaiser-Friedrich-Forschungspreis and the VDE/ITG award.

PATENTS (FILED AND AWARDED)

2016 Jia Chen, Jenna Samra, Steven Wofsy, John Budney. Diffuser-Based Solar-Tracking with Camera for Atmospheric Measurements (WO2016187502A1)


2009 Jia Chen, Andreas Hangauer, Rainer Strzoda. Anordnung zur Durchführung spektroskopischer Verfahren sowie Verwendung bei spektroskopischen Verfahren (WO2010092108A1, DE102009008624B4)


Books


Journal Publications (in Review)


Peer Reviewed Journal Publications


10. Lijuan Lan, Homa Ghasemifard, Ye Yuan, Stephan Hachinger, Xinzu Zhao, Xiao Bi, Yin Bai, Shrutilipi Bhattacharjee, Annette Menzel, Jia Chen*, “Assessment of urban CO₂ measurement and source attribution in Munich based on TDLAS-WMS and trajectory analysis”, Atmosphere, 11, 58, doi: 10.3390/atmos11010058, 2020


**Conference Publications**


19. Jia Chen and Florian Dietrich, "Differential column network in Munich for greenhouse gas monitoring”, 1st ICOS workshop on strategies to monitor greenhouse gases in urban environments, Helsinki / Hyytiälä, Finland, July 1–4, 2019


22. Xinxu Zhao, Julia Marshall, Stephan Hachinger, Christoph Gerbig, and Jia Chen, “Analysis for TotalColumn CO2 and CH4 combining WRF-GHG Model with Differential Column Methodology (DCM), European WRF-Chem User Workshop, 7–8 May, 2019


38. Andreas Luther, Ralph Kleinschek, Anke Roiger, Patrick Jöckel, Anna-Leah Nickl, Theresa Klausner, Frank Hase, Matthias Frey, **Jia Chen**, Michael Wedrat, Christoph Knote, Matthias Wiegner, Jaroslav Necki, Justyna Swolkien, Michal Kud, and André Butz, “Estimation of methane emissions in the Upper Silesian Coal Basin


40. Hartmut Boesch, Neil Humpsge, Jia Chen, Paul Palmer, “CH4 and CO validation in Tropical Africa using a portable FTS”, Second Sentinel-5 Precursor (S5P) Validation Team Meeting and First Results Workshop, The Netherlands, Feb. 5–6, 2018

41. Jonathan Franklin, Taylor Jones, Jia Chen, Steven Wofsy, “Ground-based remote-sensing of CO2, CO, and CH4 using compact solar-viewing spectrometers”, Second Sentinel-5 Precursor (S5P) Validation Team Meeting and First Results Workshop, The Netherlands, Feb. 5–6, 2018

42. F. Hase, M. Frey, D. Dubravica, J. Groß, T. Blumenstock, Q. Tu, J. Orphal, A. Dehn, P. Castracane, A. Butz, R. Kleinschek, A. Luther, J. Chen et al., “COCON – a framework for operating the EM27/SUN spectrometer”, Second Sentinel-5 Precursor (S5P) Validation Team Meeting and First Results Workshop, The Netherlands, Feb. 5–6, 2018


61. J. Chen, L. Heinle, “Mobility of the Future – an international discourse”, VDE MINT Symposium “Mobility of the Future”, Munich, Germany (Keynote speech)


81. R. Strzoda, J. Chen, A. Hangauer, “Gas sensing with infrared VCSELs”, 10th International Conference on Mid-Infrared Optoelectronics& Materials and Devices, Shanghai, China, Sept. 2010 (invited)

82. G. Böhm, A. Bachmann, J. Rosskopf, M. Ortsiefer, J. Chen, A. Hangauer, R. Meyer, R. Strzoda, M.-C. Amann, “Comparison of InP- and GaSb-based VCSELs emitting at 2.3 µm suitable for CO detection”, International Conference on Molecular Beam Epitaxy (ICMBE), Berlin, Germany


**SELECTED INVITED AND KEYNOTE TALKS**

<table>
<thead>
<tr>
<th>Date</th>
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<tr>
<td>11/2018</td>
<td>“Greenhouse Gas Monitoring in Munich and Development of CO2 and NOx Sensors”, German-Sino Symposium “Development of New Monitoring Strategies for the Investigation of Acute Air Pollution and Bioaerosol Episodes and Reducing Their Impacts on Human Health”, Chengdu, China</td>
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<tr>
<td>08/2018</td>
<td>“Differential Column Network for Monitoring Urban Greenhouse Gas and Pollutant Emissions”, Leibniz-Institut für Troposphärenforschung (TROPOS), Leipzig, Germany</td>
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<td>06/2018</td>
<td>“Here comes the sun: A new carbon detective story”, Symposium Celebration of Science and Times for Steven C. Wofsy, Harvard, Cambridge, USA</td>
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<td>02/2015</td>
<td>“Compact Ground-based Solar-tracking Spectrometers for Column Gradient Measurements”, Atomic and Molecular Physics Division (AMP) seminar, Harvard-Smithsonian Center for Astrophysics, Cambridge, USA</td>
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<td>06/2014</td>
<td>“Boston Column Network: Solar-Tracking Spectrometers for Urban Air Quality”, IEEE International Conference on Universal Village, Massachusetts Institute of Technology (MIT), Cambridge, USA</td>
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<tr>
<td>04/2014</td>
<td>“Boston Column Network: Compact Solar-Tracking Spectrometer and Eulerian Modeling”, Colloquia, Max-Planck-Institute for Biogeochemistry, Jena, Germany</td>
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<td>10/2013</td>
<td>“Mobilität der Zukunft – ein internationaler Diskurs”, VDE MINT Symposium Mobilität der Zukunft, Munich, Germany</td>
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<tr>
<td>11/2012</td>
<td>“Compact Gas Sensors for Household, Industrial and Environmental Applications”, Universität Potsdam, Potsdam, Germany</td>
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<tr>
<td>05/2008</td>
<td>“Overview on Siemens CT Research Activities in Laser Based Gas Sensing”, Princeton University, Princeton, USA</td>
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