
NH34C: Wildfires: Triggers, Predictability, and Impact Assessment

Wildfire risks in a human-natural system continuum have become more concerning in the recent years, especially along wildland-urban interfaces and in densely populated and industrial areas. For example, the 2018 Mendocino Complex Fire has become the largest fire in Californian history; and the 2016 Fort McMurray wildfires scaled down Canadian oil production for two months affecting global oil. Meanwhile, wildfires remain one of the least predictable perils due to both their aleatory uncertainty component mainly associated with wildfire ignition triggers, and their epistemic uncertainty component reflecting the lack of knowledge about fire fuel availability and its moisture content, physical setting, weather, and variability in climate. This interdisciplinary session covers topics related to wildfire including drivers/triggers, trends and anomalies, detection and monitoring, risk management and assessment, evaluation of socio-economic and ecological impacts. It also illustrates application of numerical modeling, machine learning, remote sensing, and laboratory or field data in this research field.

Wednesday, 12 December 2018

16:00 - 18:00

📍 *Marriott Marquis - Independence E*

Primary Convener

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Index Terms

Papers

- 16:00 **NH34C-01** The Deadly Montecito Post-Fire Debris Flow of January 9, 2018 and the Successes and Challenges of Post-Fire Debris-Flow Prediction and Early Warning
Mark E Jackson
(Invited)
Mark E Jackson, NOAA National Weather Service, Oxnard, CA, United States and Dennis M Staley, USGS, Baltimore, MD, United States
- 16:15 **NH34C-02** Concentrations of heavy metals and polycyclic aromatic hydrocarbons in indoor house dust after 2016 Fort McMurray Wildfires
Arthur W. H. Chan
Arthur W. H. Chan¹, Lukas Kohl¹, Meng Meng¹, Joan Sađio De Vera², Bridget A Bergquist³, Colin A. Cooke⁴, Sarah Hustins⁴, Brian Jackson, Chung-Wai Chow and Greg Wentworth, (1)University of Toronto, Department of Chemical Engineering and Applied Chemistry, Toronto, ON, Canada, (2)University of Toronto, Earth Sciences, Toronto, ON, Canada, (3)University of Toronto, Toronto, ON, Canada, (4)Alberta Environment and Parks, Environmental Monitoring and Science Division, Edmonton, AB, Canada, (5)University of Toronto, Division of Respiriology, Department of Medicine, Faculty of Medicine, Toronto, ON, Canada, (6)Alberta Environment and Parks, Environmental Monitoring and Science Division, Edmonton, Canada
- 16:30 **NH34C-03** The Fire Climate that Preceded the Largest Fire in California History: A Statistical Anomaly or Wave of the Future?
Shyh Chen
Francis Fujioka¹, **Shyh Chen**², John Benoit², Charles Jones³ and Seung Hee Kim⁴, (1)Chapman University, CEESMO, Orange, CA, United States, (2)USDA Forest Service, Pacific Southwest Research Station, Riverside, CA, United States, (3)University of California Santa Barbara, Santa Barbara, CA, United States, (4)Chapman University, Center of Excellence in Earth Systems Modeling & Observations, Orange, CA, United States
- 16:45 **NH34C-04** THE FIREHUB: A PROTOTYPE OPERATIONAL EARLY WARNING, FIRE DETECTION AND BURNED AREA MAPPING SYSTEM
Charalambos Kontoes
(Invited)
Charalambos Kontoes, National Observatory of Athens, Athens, Greece
- 17:00 **NH34C-05** Reducing California Homeowners' Wildfire Risk on Their Property and in Their Community: Willingness to Pay Results of a Choice Experiment
Armando Gonzalez-Caban
Armando Gonzalez-Caban, Chapman University, Orange, CA, United States, Jose J. Sanchez, USDA Forest Service, Vallejo, CA, United States, John B. Loomis, Professor, Department of Agricultural and Resource Economics, Fort Collins, CO, United States and Thomas Holmes, Research Forester, Forest Economics and Policy, Research Triangle Park, NC, United States

17:15

NH34C-06 ECMWF Perspective on the Big Data Challenge for Fire Forecasting

Francesca Di Giuseppe

(Invited)

Francesca Di Giuseppe, ECMWF, Reading, United Kingdom, Claudia Vitolo, ECMWF, Reading, United States and ECMWF fire forecasting team

17:30 **NH34C-07** Seasonal to decadal prediction of fire danger

Etienne Tourigny

(Invited)

Etienne⁴Tourigny¹, Joaquín Bedia², Raul Marcos¹, Balakrishnan Solaraju¹, Francesca Di Giuseppe³ and Francisco J. Doblas-Reyes⁴, (1)Barcelona Supercomputing Center, Barcelona, Spain, (2)Predictia Intelligent Data Solutions, Cantabria, Spain, (3)ECMWF, Reading, United Kingdom, (4)Institutió Catalana de Recerca i Estudis Avançats, Barcelona, Spain

17:45 **NH34C-08** Improvement Wild Fire Detection Algorithm using Time-series Himawari-8 IR Images

Sung-Hwan Park

Sung-Hwan Park, University of Seoul, Seoul, Korea, Republic of (South), Hyung-Sup Jung, University of Seoul, Seoul, South Korea and Wook Park, Yonsei University, Seoul, Korea, Republic of (South)

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