

**Wednesday, May 23, 2018**  
**SESSION IV**  
**1:00 p.m. Lecture Hall**

**Chair: Paul Schenk**

- 1:00 p.m. Shank T. M. \* German C. Machado C. Bowen A. Drazen J. Yancey P. Jamieson A. Rowden A. Clark M. Heyl T. Mayor D. Piertney S. Ruhl H.  
[\*Ocean Worlds Analog Systems in the Hadal Ocean: Systematic Examination of Pressure, Food Supply, Topography, and Evolution on Hadal Life\*](#) [#6023]  
 Key questions on life's evolution are being pursued in Earth's hadal ocean, Earth's only analog to Europa's ocean. A recent WHOI-JPL partnership is developing an armada of autonomous underwater drone vehicles to explore of Earth's and Europa's oceans.
- 1:20 p.m. Seewald J. S. \* German C. R. Grozeva N. G. Klein F. McDermott J. M. Ono S. Reeves E. P. Wang D. T.  
[\*Origin of Abiotic Methane in Submarine Hydrothermal Systems\*](#) [#6022]  
 Results of recent investigations into the chemical and isotopic composition of actively venting submarine hydrothermal fluids and volatile species trapped in fluid inclusions will be discussed in the context of processes responsible for abiotic CH<sub>4</sub> formation.
- 1:40 p.m. McKinnon W. B. \* Waite J. H. Glein C. R. Vance S. D. Zolotov M. Yu.  
[\*Ocean-Rock Interactions on Europa and Enceladus: Origin and Compositional Perspectives\*](#) [#6050]  
 We compare and contrast the ocean-rock interactions on Europa and Enceladus, drawing on cosmochemical and evolutionary perspectives, and suggest spacecraft tests.
- 2:00 p.m. Postberg F. \* Khawaja N. Glein C. R. Hsu H.-W. Kempf S. Klenner F. Noelle L. Schmidt J. Tobie G. Waite J. H.  
[\*Macromolecular Organic Compounds Emerging from the Enceladus Ocean\*](#) [#6043]  
 We report observations of ice grains emitted by Enceladus containing concentrated, complex, macromolecular organic material. The data provides key constraints on the macromolecular structure and eludes Enceladus' organic rock/water chemistry.
- 2:20 p.m. Hayman N. W. \*  
[\*Faults and Fractures in the Subseafloor Environment tell a Different Story than They do at the Seafloor\*](#) [#6015]  
 Planetary studies can benefit from a lesson learned in the research of Mid-Ocean Ridges, wherein the subsurface view of faulting and fracturing contrasts with surface observations, important for the dynamics and chemistry of hydrothermal systems.
- 2:40 p.m. Hsu H.-W. \* Kempf S. Postberg F. Schmidt J. Horanyi M.  
[\*Nanoparticles as a Messenger of Rock-Water Interactions in the Subsurface Ocean of Europa\*](#) [#6035]  
 The lesson learned from the Cassini mission will help to probe nanograins carrying the rock-water interaction information from Europa from afar.
- 3:00 p.m. *Break*
- 3:30 p.m. DISCUSSION
- 4:30 p.m. MEETING RECAP