

The minerals and the fluids of the ocean worlds

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Spacecraft observations at icy bodies across the solar system and beyond have revealed systematic evidence of salts, brines, and carbon compounds. Data on phase behavior, thermophysical properties, and thermodynamics of these materials are needed in order to improve the fidelity of interior models and prepare for future missions (e.g., JUICE, Clipper). The results from recent observations at icy moons and dwarf planets (e.g., Saturn's moons, Ceres, and Pluto and Charon) call for a more accurate description of the mineralogy expected in these bodies that accounts for the diverse volatile and rock chemistry predicted by accretion models.

This session invites papers that advance the state of understanding the physical and chemical properties of ices, salts, hydrates, brines and fluids at the conditions relevant for large icy moons, dwarf planets, and large ocean worlds. We welcome contributions in theoretical and experimental research in these areas, and insights expected from future missions.