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SUSTAINABLE EXPLORATION OF GIANT PLANETS' ICY MOONS

Abstract

The natural satellites of the giant planets offer new tantalizing opportunities to explore dark and cold (far-away from the Sun) undersurface environments that harbor liquid water, organic chemistry and energy sources, so that a new concept of habitable environments could still be considered. This is the case for satellites of Jupiter and Saturn like Europa, Enceladus, Titan and Ganymede for instance. I will discuss the main objectives of their current and future investigations as related to their astrobiological potential, the types of missions foreseen and the measures applied in planetary protection to ensure a sustainable exploration.