**Introduction:** Water is a precious commodity for living organisms, whether present in deep oceans or monolayers deposited on rocky surfaces. Nonetheless, our understanding of the availability of liquid water, in pure form or as a brine accompanying salt deposits, is not generally appreciated on a planetary scale, especially when looking at the surface and near surface of places like Mars.

The most recent MEPAG review of Mars Special Regions [1] contained the following statement, “Mars’ average atmospheric pressure allows for liquid water when it exceeds that of the triple point of water, and at lower altitudes (e.g., Hellas and Argyre Basins) that is commonly the case. Higher temperatures and/or insolation may allow melting or condensation over limited areas for short time periods.” Nonetheless, the US National Academies – European Science Foundation review of the MEPAG report [2] disagreed with a preliminary statement regarding the potential for snow fallen on Mars to melt, and thus stated that, “The review committee asserts that pure liquid water simply cannot exist on Mars because the atmosphere is too dry to allow it. The partial pressure of atmospheric water vapor is typically less than 1 Pa near the surface of Mars, whereas the partial pressure of water vapor at the triple point of water is about 600 Pa.”

This paper will address the discrepancies between what the MEPAG paper actually asserted, and the validity of the arguments in each report and in the literature for and against liquid water on Mars—whether salty or pure (as the Mars-driven snow). The paper will also review previous attempts to understand the relationship between atmospheric and surface conditions on Mars and the availability of liquid water, both salty and pure.

**References:**
