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Laboratory modeling of perchlorates impact on subsurface life in martian-like environments

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Phoenix mission has discovered an unusial hihg content of perchlorates in surface layer of the Mars. On the other hand large amount of water ice present in surface layer. Our laboratory modeling has demonstrated that terrestrial nonextremophile microorganisms can reproduce even under extremely low atmospheric pressure (0.01–0.1 mbar). Necessary conditions for metabolism and reproduction are the sublimation of ground ice through a thin upper layer of soilleading to liquid water films production and short episodes of warm temperatures in the vapor diffusion layer. Perchlorates could be a potential harmful factor for any type of life forms as strong oxidants. On the other hand, perchlorates effectively decrease temperature of water freezing point creating a possibilitity of the liquid water films existence even at temperatures below 0[U+F0B0]C. We presents the results of laboratory modelling of perchlorates impact on microorganisms in martian like conditions (P-T) at different concentratiion of perchlorates