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### **Formation of Biomolecule Precursors in the Interstellar Medium and Planetary Atmospheres**

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It has been a subject of intense discussions to which extent biomolecule precursors have been synthesized on planetary surfaces in atmospheres or in the interstellar medium (ISM). Whereas more advanced biomolecules like amino acids are not expected to survive the strong UV field present under disk and planetary formation, this may not hold for precursor molecules like nitriles, which are present abundantly in the ISM and could be delivered to planets by comets or meteorites. In planetary atmospheres, nitriles can polymerize to tholines, which upon hydrolysis can form amino acids and nucleobases. Also, the Cassini-Huygens mission revealed that protonated nitriles are abundant in Titan's atmosphere, which possibly resembles the one of early Earth. Due to the high proton affinity of their parent compounds, DR is the main destruction pathway of these ions. We present measurements on the rate constants and branching ratios of the DR of several important protonated nitriles in a storage ring experiment.