

AU Le Padellec, A, Staicu-Casagrande, EM, Nzeyimana, T, Naji, EA, Urbain, X

TI Reactive collisions between CH⁺ and O-

SO JOURNAL OF CHEMICAL PHYSICS

LA English

DT Article

ID FREQUENCY LASER SPECTROSCOPY; DISSOCIATIVE RECOMBINATION;
RADIATIVE, LIFETIMES; CHEMI-IONIZATION; MERGED-BEAM; MOLECULAR
CLOUDS; FUNDAMENTAL-BAND; CROSS-SECTION; STATES; HCO⁺

AB Integral cross sections were measured for two reactions occurring in CH⁺⁺O⁻ collisions: the formation of the carbon monoxide cation CO⁺ via a reactive ionization process and the formation of the (iso)formyl cation HCO⁺ (HOC⁺) via the associative ionization process. Both carbon monoxide and formyl cations are present in the interstellar medium, the latter one being quite abundant in dense clouds. Provided the oxygen anion would also be present in the interstellar environment, the large efficiency of the two reactive processes reported here would justify their inclusion in astrochemical models. The whole set of data was obtained by means of a merged-beam setup operating with keV beams. (c) 2006 American Institute of Physics.

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NR 41

TC 0

PU AMER INST PHYSICS

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J9 J CHEM PHYS

J1 J. Chem. Phys.

PD APR 21

PY 2006

VL 124

IS 15

AR 154304

DI ARTN 154304

PG 6

SC Physics, Atomic, Molecular & Chemical

GA 034ZN

UT ISI:000236969500013