ADVANCING ION-NEUTRAL COLLISION STUDIES: A HIGH-RESOLUTION METHOD WITH EXTENSIVE ENERGY RANGE

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This presentation is centered on introducing an innovative experimental platform dedicated to the study of ion-neutral collisions, with a special emphasis on molecules present in the interstellar medium (ISM). Our goal is to accurately replicate the ISM environment in a laboratory setting, focusing on a broad energy spectrum that ranges from 10 to 5000 K and ensuring high collision energy resolution of <10 K. The key feature of the new method is the precise control of ion velocities, enabling studies of collisions across a wide range of energies with high resolution. Experimental design, calculations, and preliminary results will be presented in this talk.