A brief review of current themes in molecular photoionization, as a tool to elucidate molecular structure and dynamics, will be presented. The theoretical capabilities presently available in Trieste, and the current developments, will be illustrated. Recent results will be presented on molecular frame photoelectron angular distributions (MFPADs), interference and diffraction, ionization in strong field, perspectives in ultrafast imaging of electron dynamics.

Polar plots of molecular-frame photoelectron angular distributions obtained after photoionization of CS$_2$ 10 eV above the S 1s threshold from different kinematical conditions. Ref) R. Guillemin et al., Nat. Comm. 6 (2015) 6166.

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