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MERGED BEAM STUDIES OF THE ASSOCIATIVE IONIZATION PROCESS. *Arnaud Le Padellec*¹, *Xavier Urbain*², *Théodore Nzeyimana*², and *El-Arbi Naji*². (1) *Department of Physics, Toulouse University, Bat III R1b4, 118 route de Narbonne, Toulouse 31062, France, Fax: 33 56-155-8317, arnaud.lepadellec@irsamc.ups-tlse.fr, (2) Department of Physics, Université catholique de Louvain*

A merged-beam study of the associative ionization process resulting from the collisions of O⁻ with C⁺, N⁺ and O⁺ will be presented. All cross sections happen to be extremely large (over 1×10^{-14} cm² below 25 meV) and follow the usual E⁻¹ energy dependence. However, subtle differences appear in the energy range 1-10eV as the result of the opening up of competing processes. An additional work, in which we investigated the systems D⁺ + O⁻ and O⁺ + D⁻, will also be part of the presentation. The cross sections are somewhat smaller than those encountered with the previous systems, but still of reasonable magnitude.