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The enhancement of aqueous aerosol formation by ions and radicals SAMUEL KEASLER, RICKY NELLAS, HYUNMI KIM, Louisiana State University, JOSEPH FRANCISCO, Purdue University, BIN CHEN, Louisiana State University — The formation of aqueous aerosols in the atmosphere is of significant importance due the role of these particles in heterogeneous chemistry. One important mechanism for the formation of these aerosols is the multi-component nucleation of water with other compounds present in the atmosphere, such as ions and radicals. We have applied the AVUS-HR approach developed in our group for to examine the nucleation of water in the presence of both single ions and ion pairs, and to the binary nucleation of water with hydroxyl and peroxyl radicals. This method allows us to efficiently calculate the free energy profile for these nucleation processes as a function of the cluster size and composition. This information can give us a clear picture of the role that these ions and radicals may play in forming aqueous aerosols.

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