Air-snowpack exchange of bromine, ozone and mercury in the springtime Arctic simulated by the 1-D model PHANTAS – Part 2: Mercury and its speciation

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Similar to Toyota et al's compendium manuscript (Air-snow exchange of bromine, ozone and mercury in the springtime Arctic simulated by the 1-D model PHANTAS – Part 1: In-snow bromine activation and its impact on ozone), they utilized their 1-D model with embedded multiphase air-snowpack physicochemistry to more accurately and precisely quantify polar tropospheric atmospheric mercury depletion events – specifically, focusing on the physicochemical mechanisms that govern AMDEs. Expounding upon their compendium manuscript, Toyota et al expands their chemical mechanism to take into account gas/aqueous phase mercury reactions (with appropriately parameterized temperature dependence, rate, and equilibrium constants). Therefore, one attains a comprehensive understanding of how AMDEs and ODEs simultaneously. I, therefore, recommend this manuscript as well for publication.