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**SVEs during Earth's core formation – Modeling of partitioning behavior**

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The hypothesis that we are testing uses the accretion of major portions of volatile elements while the core formation was still active. This study is using new metal-silicate partitioning data for a wide range of SVEs (S, Se, Te, Tl, Ag, As, Au, Cd, Bi, Pb, Sn, Cu, Ge, Zn, In and Ga), from internally consistent experiments, with a focus on sulfur dependencies.

We will present the results for a suite of elements, similar in terms of volatility (i.e. 50% condensation temperature and depletion in the bulk silicate Earth (BSE) relative to CI chondrite. This data set was used to model the compositional evolution of the BSE, the segregating metal diapirs and the Earth's core. The data has been compiled in a step-wise accretion model assuming continuous core formation and heterogeneous impactor compositions.

The model outcome is suggesting that the core formation due to metal/silicate partitioning, on its own, is not reproducing the observed depletion trend for the PM values (c.f. [1]) for various SVEs.

[1] Lodders K. et al. (2003) *Astrophys. J.* 591, 1220-1247.

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