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## Magnesium Stable Isotope Composition of the Earth and Chondrites

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Lai\*, Y.J., Pogge von Strandmann, P.A.E., Elliott, T., Russell, S.S. \*Institute for Geochemistry and Petrology, ETH Zurich <u>vi-chen.Lai@erdw.ethz.ch</u>.

As one of the most abundant rock-forming elements, magnesium analyses are central to understanding the compositions of planetary bodies. Of particular current interest are magnesium isotope compositions of planetary building blocks and the processes that fractionate isotope compositions during planetary accretion and differentiation. It is important to assess if the Mg isotope composition of the Earth is the same as that observed in meteorites. The dominant reservoir of Mg on Earth is the mantle (> 99%). This makes it possible to attain representative samples of the Mg isotopic composition of the bulk Earth by selecting samples that best represent the Earth's mantle.

Here, we present new, high precision Mg isotope data (<0.03 ‰ on  $\delta^{26}$ Mg) of tectonically emplaced peridotite massifs, which we compare with carbonaceous chondrites. The results show that Mg isotope data of carbonaceous chondrites are consistently lighter than the terrestrial peridotites, which may infer that the Earth is built from another chondrite (or a mixture of different type of chiondrites) not yet measured to high precision.

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