

## On the density and bulk sound velocity jumps at the 660 km seismic discontinuity in the mantle

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Recently we have derived accurate interatomic potential models for the  $\text{Mg}_2\text{SiO}_4$  system, MgO periclase, and  $\text{MgSiO}_3$  perovskite. Using these potential models we have applied the molecular dynamics (MD) simulation to predict reliable values for the density and bulk sound velocity contrasts between  $\text{Mg}_2\text{SiO}_4$  spinel and MgO periclase plus  $\text{MgSiO}_3$  perovskite at the 660 km seismic discontinuity in the mantle. The MD simulated density and bulk sound velocity contrasts are then compared with recently reported seismological data at the 660 km discontinuity to assess these seismological data in detail.