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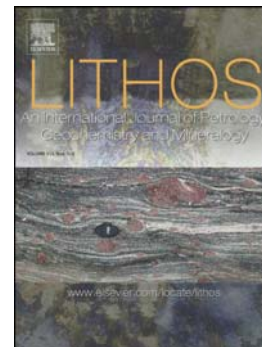
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Evidence for H₂O-bearing fluids in the lower mantle from diamond inclusion

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Abstract

In this study we report the first direct evidence for water-bearing fluids in the uppermost lower mantle from natural ferropericlase crystal contained within a diamond from São Luíz, Brazil. The ferropericlase exhibits exsolution of magnesioferrite, which places the origin of this assemblage in the uppermost part of the lower mantle. The presence of brucite-Mg(OH)₂ precipitates in the ferropericlase crystal reflects the later-stage quenching of H₂O-bearing fluid likely in the transition zone, which has been trapped during the inclusion process in the lower

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