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Migmatization induced overpressure, East Greenland case study

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PT paths recorded in HP/UHP eclogites and diamond/coesites bearing rocks are commonly interpreted as indicative of a continental subduction followed by a rapid exhumation. Recently, a need for alternative models explaining similar type of pressure-temperature evolution has been recognized. We investigate occurrences of HP eclogites in the Liverpool Land (East Greenland). On the large geodynamic scale it belongs to the "wrong" side of the Caledonian orogen. It has been suggested that changes of the subduction polarity may resolve this difficulty. On the outcrop scale, large vertical displacements are not evident in the structural record. Actually, there is an extensive record of migmatitization in the host rock embedding eclogitic boudines. We suggest that the migmitization under confinement may lead to a local pressure build-up. Eventually, disruption of the confining media initiates the exhumation of eclogites and migmitized gneisses towards the Earth surface.