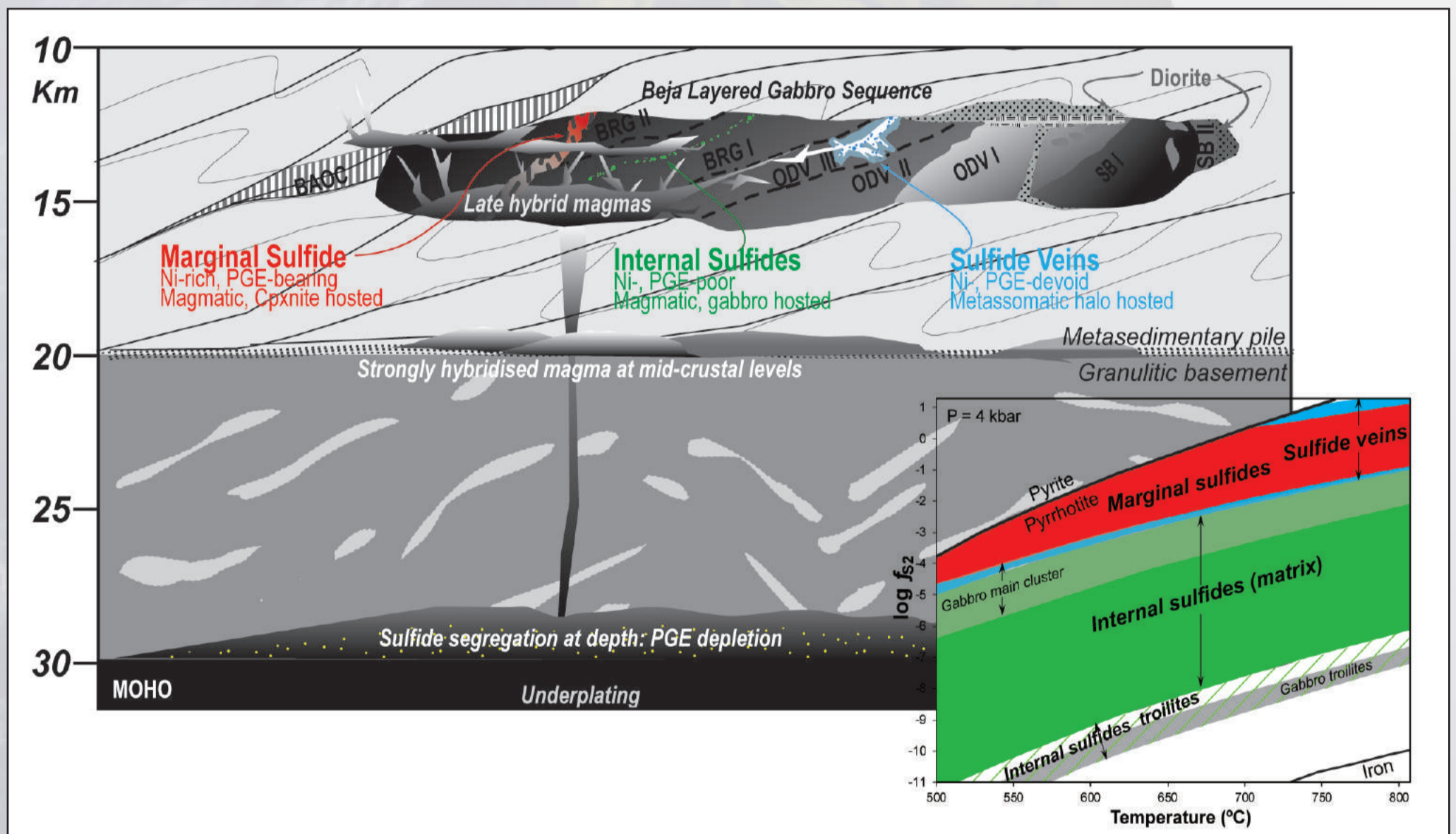


SOLID EARTH SEMINARS

ARE OROGENIC SETTINGS PROSPECTIVE FOR NI-CU-PGE EXPLORATION? INSIGHTS FROM A VARISCAN GABBROIC LAYERED INTRUSION (BEJA, PORTUGAL)



A growing number of magmatic Ni-Cu sulfide deposits discovered in orogenic environments has renewed the interest on this category and reinforced that most orogenic mafic magmas are PGE depleted. The Beja Layered Gabbroic Sequence (LGS) was emplaced during the same Variscan tectono-magmatic event as the Aguablanca Ni-Cu-PGE deposit in Spain, however, no economic mineralization was yet found in LGS. We analyzed three sulfide ore-showings developed within different environments of LGS that provide a unique frame to assess sulfide segregation in orogenic mafic magmas: the Internal Sulfides hosted at the core of the layered suite, the Marginal Sulfides located at a complex domain where the LGS is intruded by late magmatic anorthosite-tonalite-trondhjemite (ATT) suite and the Sulfide Veins, associated to late magmatic-hydrothermal activity. Although estimated primary PGE abundances for LGS magmas are within the range of MORBs, all sulfide types derived from PGE ± Ni depleted melts due to sulfide segregation during underplating. The presence of deep crustal faults that prevent magma stalling and sulfide saturation at depth is paramount to generate orogenic magmatic sulfide deposits of economic value. These and other factors controlling the geochemical features in LGS and other orogenic mafic magmas will be discussed.

ZOOM



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MARCH 17

Wednesday: 13:00

PASS: RG234_SES

<https://videoconf-colibri.zoom.us/j/89018419156>

WHAT'S THIS ABOUT?