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Phase diagrams for the eclogites from Koralpe

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In the Kor- and Saualpe of the Eastern Alps several hundred eclogite bodies occur within metapelitic gneisses. The bodies are between 1 meter and several hundreds of meters in size and some of them were defined by Haüy (1822) as the type locality for the rock type “eclogite”. A growing body of petrological work has documented the metamorphic evolution of the metapelites surrounding the eclogites, including studies of the *PT* paths, studies of the evolution of water content and geochronological work documenting the cooling and heating rates. Moreover, there are some petrological, geochemical and geochronological studies on eclogites, but very little work has been done on phase diagrams for the eclogite bodies themselves. Here we use recently available activity models for amphiboles to present new thermodynamic pseudosections for the Koralpe eclogites that can be used to constrain their P-T path and general metamorphic evolution. Eclogites with gabbroic and basaltic precursors and in different states of hydration are compared in order to maximize P-T information and constrain the activity of H_2O. The comparison between eclogite and the gneissic host permits to integrate these to the tectonic evolution of the Eastern Alps.