

Project proposal entitled „The role of pre-Variscan basement in the formation of the thickened orogenic crust and exhumation of HP rocks during the Variscan orogeny” is dedicated to investigation of crystalline basement formed long before the Variscan orogeny, which then during the Variscan orogeny has been intensely reworked by processes of deformation and metamorphism. This type of crystalline basement is exposed in several places in the Sudetes Mountains and Fore-Sudetic Block. One such area is the Kamieniec Metamorphic Belt and the Doboszowice Metamorphic Complex (Fig. 1). We intend to: (1) describe provenance of pre-Variscan basement cropping out in the Fore-Sudetic Block as well as their similarity to one of the known domains represented by Brunovistulicum and Saxothuringian, (2) define the north-eastern extent of the Rheic suture, (3) describe the history of deformation and metamorphism related to Variscan orogeny which led to exhumation of HP rocks from great depth to mid crustal level and their juxtaposition with shallow crustal complexes.

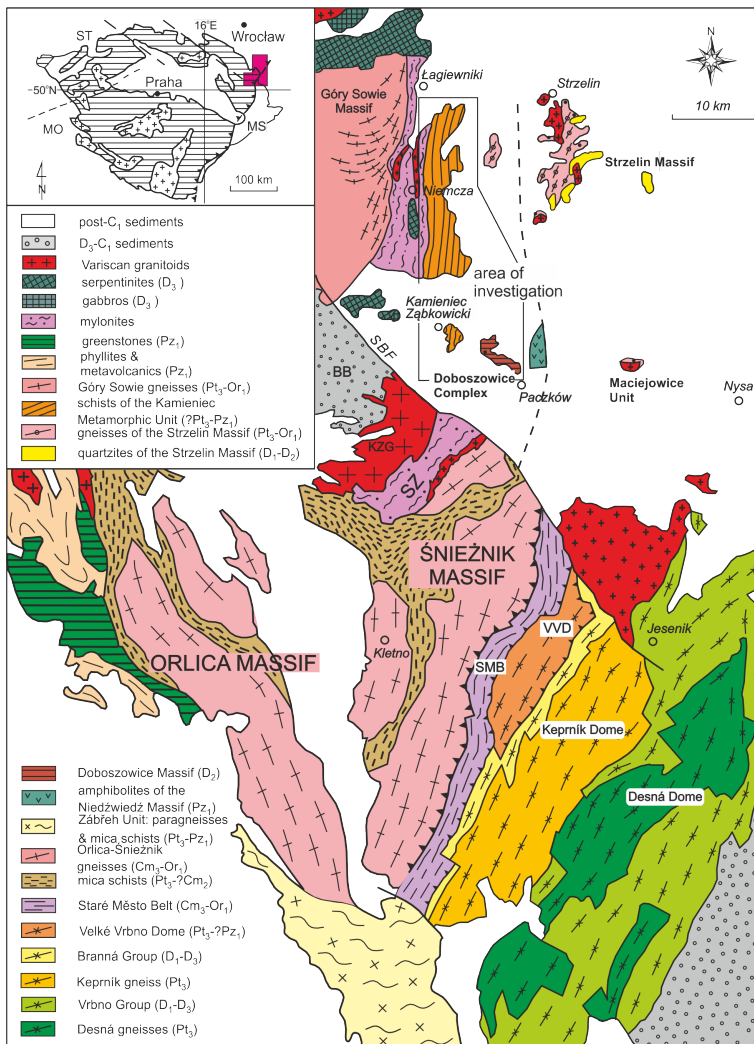


Fig. 1. Simplified geological map of metamorphic complexes cropping out in the eastern part of the Fore-Sudetic Block. Dashed line represent position of the contact between Central and East Sudetes in the Fore-Sudetic Block.

The volcano-sedimentary succession cropping out in the Kamieniec Metamorphic Belt and the Doboszowice Complex comprises largely mica schists with intercalations of quartzo-feldspatic schists and amphibolites. This indicates that the described rock succession can be considered as a remnant of volcano-sedimentary infill of a marine sedimentary basin. Chemical composition of both sediments and volcanics filling the basin bear a record of tectonic setting of a basin. Lithological similarity to rock series cropping out in the Snieznik Massif suggests that volcano-sedimentary of Kamieniec Metamorphic Belt and the Doboszowice Complex might have been formed during the Cadomian orogeny or shortly after it. On the other hand, lithologically similar successions outcrop in other parts of the Sudetes and Fore-Sudetic Block. Interestingly, according to many researchers volcano-sedimentary successions located in the Snieznik Massif, Bystrzyckie Mountains (the Orlica-Snieznik dome, Central Sudetes), or cropping out in the Jeseník Mountains (East Sudetes) belong to different terranes (fragments of the continental crust). As they are now in the immediate vicinity their amalgamation must have been related to the Variscan Orogeny. A trace of these events is the tectonic suture defined in the literature as the Rheic suture (Fig. 2).



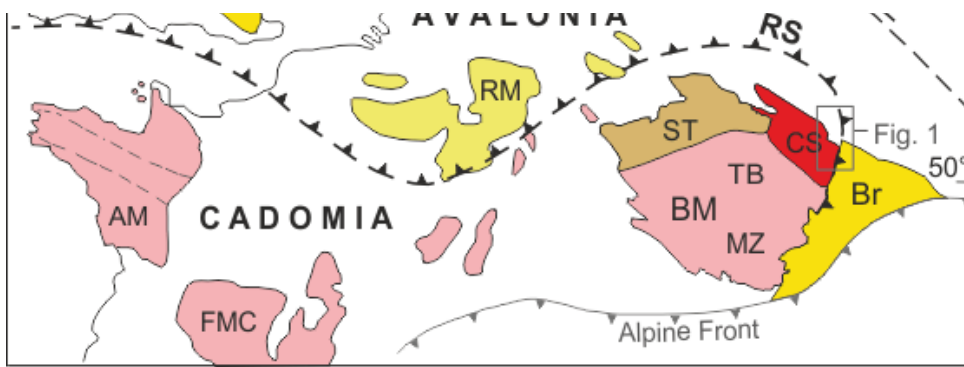


Fig. 2. Terranes in southern and middle Europe. AM, Armorican Massif; BM, Bohemian Massif; Br, brunia (brunovistulicum); CS, Central Sudetes; Ga, Ganderia; FMC, Central Massif; IS, Iapetus suture; MC, Midland Craton; MZ, Moldanubian Zone; RM, Rhenish Massif; RS, Rheis suture; SZ, Saxoturingian Zone; TS, Thor suture; TTZ, Teisseyra-Tornquist Zone.

Volcano-sedimentary successions comprising the Kamieniec Metamorphic Belt and the Doboszowice Complex bear a record of deformation and metamorphism related to the Variscan orogeny. Surprisingly, within this area there are occurrence of eclogites that bear a record of high-pressure metamorphism. These rocks are exposed only in the Sudetes Mts within the Sowie Góry Block and the nie nik Massif. As a result, these rocks are the source of information about the processes associated with the Variscan subduction and subsequent collision of fragments of the continental crust represented by Armorican Terrane Assmeblage (Cadomia, Central Sudetes) and brunovistulicum (East Sudetes). As a result, volcano-sedimentary succession cropping out in this area is a very attractive and promising object of research that allows to study the mechanisms responsible for the development of Phanerozoic orogens.