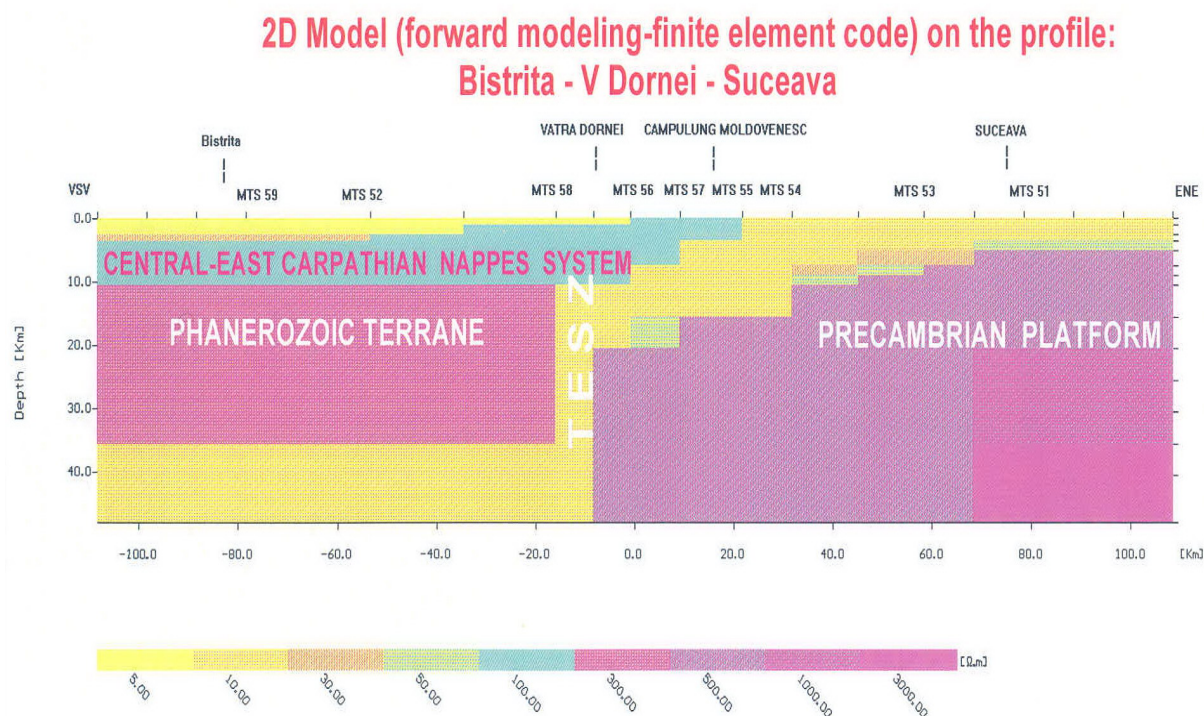


EM images used for emphasizing the tectonically-induced electrical conductivity anomaly by the TESZ in Romania

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Running from the North Sea, through the central Europe, up to the Bleak Sea, over a distance of 2000 km, the Trans-European Suture Zone (TESZ) is the most prominent paleosuture separating mobile Paleozoic terranes (young Europe), in the south and west, from the Precambrian East European Craton. Thus, on the Romanian territory, in order to define the lithospheric geoelectric structure along the TESZ and its interrelation with Carpathian electrical conductivity anomaly (CECA), some tomographic images derived from 2D inversion and forward modeling of the magnetotelluric (MT) data (see Fig), carried out along the five profiles, have been analyzed. On this way, using this information, it was possible to delineate the placement, width and depth extension of the TESZ in the rooted area of the Carpathians flysch nappes system, corresponding to the intraplate collisional boundary between the East European Platform, characterized by thick lithosphere (170 km) and Transylvanian Depression, with thinner lithosphere (80 km). Along this suture zone, the induction vectors map also reveal an enhanced electrical conductivity anomaly of about 0.1 S/m. The EM results generally confirm the idea that TESZ forms not only specific geotectonic boundary, but also causes peculiar electrical conductivity anomaly in the crust and upper mantle.

Keywords: EM images, TESZ, CECA, East European Platform