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A new sedimentary cover model for the southern area of the East European Platform and the Pre-Caucasus based on decompensation gravity anomalies data

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A new model has been developed for the density and thickness of the sedimentary cover in a vast region at the junction of the southern part of the East European Platform, the Pre-Caucasus and some structures adjacent to the south, including the Caucasus. Structure and density of sedimentary basins was studied by employing the approach based on decompensation of gravity anomalies. Decompensative correction for gravity anomalies reduces the effect of deep masses providing compensation of near-surface density anomalies, in contrast to the conventional isostatic or Bouguer anomalies. . The new model of sediments, which implies their thickness and density, gives a more detailed description of the sedimentary thickness and density and reveals new features which were not or differently imaged by previous studies. It helps in better understanding of the origin and evolution of the basins and provides a background for further detailed geological and geophysical studies of the region.