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PSI Vertical Movements of Prague and Ostrava areas, Czech Republic

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In the Czech Republic two areas have been analysed by the Persistant Scatterer Interferometry (PSI): the Prague area, the capital of the Republic, and the Rybnik-Ostrava area. The second area is investigated within the cross-border Czech-Polish collaboration. In Prague area several subsiding and uplifting trends were detected for individual structures. Most of them have local origins in structures themselves and/or in their geotechnical foundations and a few of them only relate to slight landslide slope movements. Subsiding and uplifting movements, existences of which had been expected in alluvial covers along the Vltava River after the extreme “one thousand-year” flood struck Prague in 2002, could not be detected because of many refractor destructions in the flood zone. Expected subsiding linked to the Vltava river terraces drained by Prague subway system has not been detected as well. The Rybnik-Ostrava area includes the Ostrava-Karviná coal basin belonging geologically to the Upper Silesian basin. The cross-border Czech-Polish collaboration in this area allows the same geohazard problems posed in the mining regions to be solved more effectively and comprehensively. Regional pattern of subsiding vertical movements was correlated with past mining activities and effects observed on building structures. The combined CZ-PL interpretations and expertises of attained results lead to greater opportunities for exploitation. All achieved results and relations mentioned above will be presented.
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