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Fig.5 enlarged subsidence results

With the development of mine excavation activities, mining subsidence would cause a great impact on the surrounding environment. We can see that the land subsidence of the mining area has spread to the residential area, the road and the railway nearby. In Fig.5 Red border represents the extent of the land subsidence exceeding 5mm which would affect the safety of buildings, highways and may cause major safety accidents. From the land subsidence on the residential area, the road and the railway around the mine, it can be speculated that underground cross-border excavation occurred in the area. Law enforcement agencies can easily judge whether mining company overlift or not through comparing the ground subsidence results with the scope of mineral rights.

5. CONCLUSIONS

The mine excavation activities could lead to land subsidence. DInSAR technique can monitor the land subsidence using the phase information of SAR images. By choosing interferometric pairs with small spatial baseline and time baseline in the same season, the coherence can preserve better. The application of DInSAR technique is of great importance for monitoring mine underground excavation. The results of DInSAR technique can be a basis for law enforcement officers when they survey that mining company whether has an underground cross-border excavation or not.

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