GÖKTÜRK 2   RASAT

Figure 3. Pansharpened images of RASAT and GÖKTÜRK-2.

3.2 VISUAL ANALYSIS

Generally speaking, since GÖKTÜRK-2 has more geometric and radiometric resolution than RASAT, the visual quality of GÖKTÜRK-2 pan-sharpened images are higher than RASAT. The visual comparison was made for the urban and forest areas. As expected by the characteristics of HPF, this methods does not keep the colour, so its success on forest areas is poor than in urban areas.
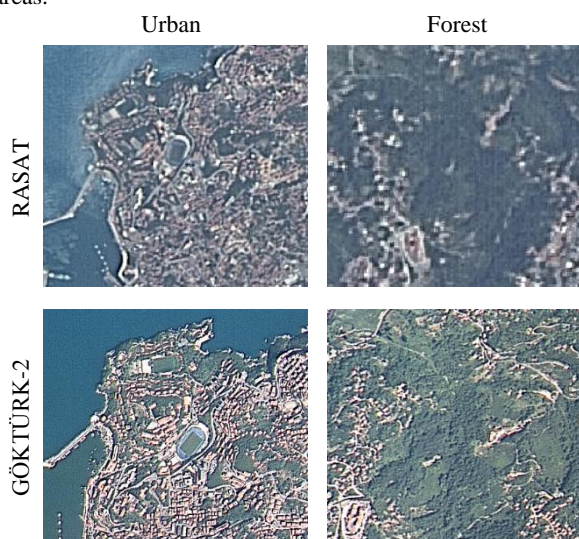
Urban   Forest

Figure 4. Viusal comparison in urban and forest areas.

4. CONCLUSION

In this study, the pan-sharpening performance of RASAT and GÖKTÜRK-2, two of three in-operation satellites of Turkey, were investigated. HPF is preferred for the pan-sharpening method, and the images were investigated using the spatial metric for quantitative analysis. The findings for correlation coefficients were 0.9678 for RASAT and 0.9542 for GÖKTÜRK-2, which both were close the optimal value (1) of this metric. Since HPF does not keep the colour information, the success of this method is relatively poor than in urban areas in the visual comparison.

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REFERENCES

Abdikan, S., 2017. RASAT verisi kullanarak farklı pan-keskinleştirme yöntemlerinin istatistiksel analizi. Türk Coğrafya Dergisi 68, 57-62.

Bayık, Ç., Topan, H., Özendi, M., Oruç, M., Cam, A., Abdikan, S., 2016. Geospatial Analysis Using Remote Sensing Images: Case Studies of Zonguldak Test Field, International Archives of Photogrammetry Remote Sensing and Spatial Informaton Sciences. Copernicus Publications, Prague (Czech Republic), pp. 435-442.

Lu, D., Li, G., Moran, E., Dutra, L., Batistella, M., 2011. A comparison of multisensor integration methods for land cover classification in the Brazilian Amazon. GIScience & Remote Sensing 48, 345-370.

Ozendi, M., Topan, H., Cam, A., Bayık, Ç., 2016a. Pan Sharpening Quality Investigation Of Turkish In-Operation Remote Sensing Satellites: Applications With Rasat And Göktürk-2 Images. International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences 42.

Ozendi, M., Topan, H., Oruc, M., Cam, A., 2016b. Pan-sharpening quality investigation of PLÉIADES-1A images. Geocarto International 31, 881-890.

Palsson, F., Sveinsson, J.R., Benediktsson, J.A., Aanaes, H., 2012. Classification of Pansharpened Urban Satellite Images. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing 5, 281-297.

Stathaki, T., 2011. Image fusion: algorithms and applications. Academic Press.

Teke, M., Seyfioglu, M.S., Agcal, A., Gurbuz, S.Z., 2014. Optimal pansharpening of RASAT satellite imagery, Signal Processing and Communications Applications Conference (SIU), 2014 22nd. IEEE, pp. 1967-1970.

Teke, M., Demirkesen, C., Haliloğlu, O., İmre, E., 2016. Göktürk-2 Uydusunun Bağıl ve Mutlak Çapraz Radyometrik Kalibrasyonu. Harita Dergisi, sayı 155: 32-52

Yusuf, Y., Sri Sumantyo, J.T., Kuze, H., 2013. Spectral information analysis of image fusion data for remote sensing applications. Geocarto International 28, 291-310.