

L1C / L2A comparison on Madeira island, Portugal

Sentinel-2 MSI L1C acquired on 13 February 2019 at 12:02:11 UTC
Sentinel-2 MSI L2A acquired on 13 February 2019 at 12:02:11 UTC

Author(s): Sentinel Vision team, VisioTerra, France - svp@visioterra.fr

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[3D Layerstack](#)

Fig. 1 - S2 MSI L1C (13.02.2019) - 4,3,2 natural colour - Madeira is a Portuguese volcanic island off the Moroccan coast.

[2D view](#) [3D view](#)



Fig. 2 - S2 MSI L2A (13.02.2019) - The contrast is increased in the L2A image, but discontinuities between tiles appear.

[3D view](#)



Fig. 3 - S2 MSI L1C (13.02.2019) - Using common stretching values, the L1C image lacks contrast.

[3D view](#)

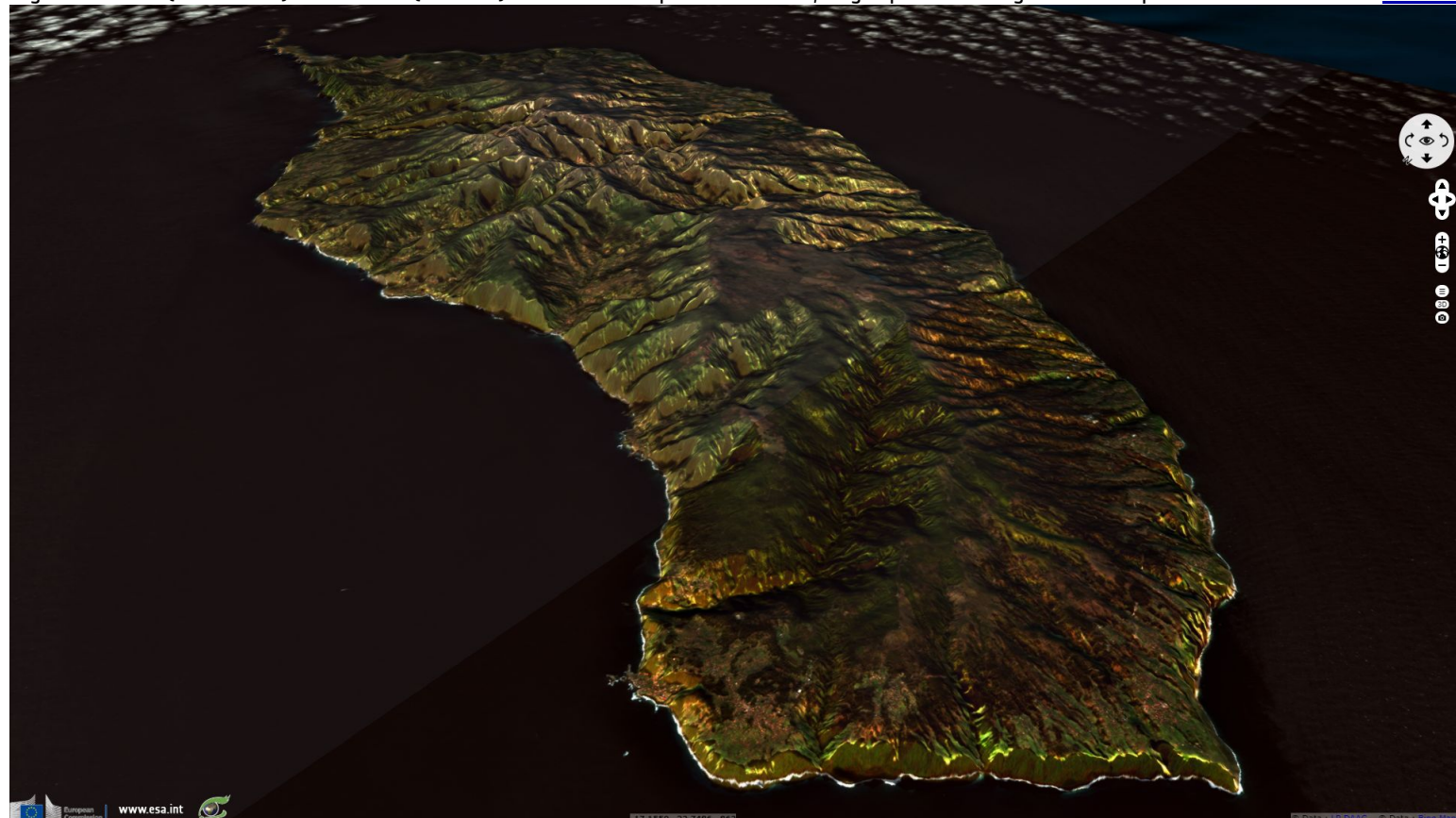


Fig. 4 - S2 MSI L2A (13.02.2019) - With these common stretching values, the L2A shows slightly darker.

[3D view](#)



Fig. 5 - S2 MSI (13.02.2019) - Difference (L2A-L1C) - Due to atmosphere correction, bright pixels are brighter & dark pixels darker in the L2A. [3D view](#)



The part of the image that lie in the shadows caused by the slopes are corrected, appearing bright on the difference image. In the same way, south-exposed slopes show in dark on the difference image as the overexposure is corrected.

The difference between L2A & L1C images shows the atmospheric scattering is corrected. Showing in bright on the difference image, the atmospheric correction makes the brightest features still brighter. Similarly, showing in dark, the darkest features are still darker after this correction.

The centre of the clouds shows brighter after the correction while the translucent part of the clouds is partly recovered in L2A images. Ground areas lying in the cloud shadows is recovered when possible.

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