



## **Deformation between 1989 and 1997 at Piton de la Fournaise volcano retrieved from correlation of panchromatic airborne images**

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Two panchromatic airborne images are processed in the attempt to measure ground deformation on Piton de la Fournaise volcano between 1989 and 1997. Subpixel image-correlation technique is applied. Piton de la Fournaise erupted three times during 1989-1997 with fissures opening near Dolomieu summit crater. Correlograms analyses suggest E-SE spreading of the summit area due to both eruptive fissures opening and ancient fractures reactivation. We performed measurements all along eruptive fissures and we found maximum 1.5 meters fissure opening. Moreover, we show a comparison between deformation retrieved by correlograms and available GPS data at 4 locations. We demonstrated the reliability of correlation technique, using airborne panchromatic images, for deformation monitoring on volcanoes. We also demonstrate the potential of this technique for precise lava flow mapping