

R003-P12

ポスター 3 : 11/26 PM2/PM3 (14:50-18:25)

2022年1月 Hunga Tonga-Hunga Ha'apai 火山噴火後にアテーレおよびアピアで観測された2時間スケール磁場変動

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Magnetic field variations with a 2-h timescale in Tonga and Samoa following the HTHH volcanic eruption on January 15, 2022

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The massive eruption of the Hunga Tonga-Hunga Ha'apai (HTHH) volcano on January 15, 2022, triggered a variety of phenomena, including intense lightning from plume activities, Lamb waves propagating through the atmosphere, conventional tsunamis alongside those influenced by Lamb waves, and TEC (total electron content) variations in the ionosphere. This presentation explores magnetic field variations with a timescale of approximately two hours following the eruption. These variations were most prominent in the vertical magnetic component observed at 'Atele (Tonga). Additionally, similar variations in the eastward magnetic component were detected at both 'Atele and Apia (Samoa). Simple electric current models in the ionosphere fail to adequately explain the magnetic field features observed at 'Atele and Apia simultaneously, if these variations were linked to localized electric current induced by the volcanic eruption in the ionosphere. This raises the possibility that the two-hour timescale variation observed at Apia was generated by an electric current of larger spatial scale and may not have been directly related with the eruption. Furthermore, it is emphasized that analyzing the vertical magnetic component with considerations of electromagnetic induction within the Earth is crucial for understanding the electric currents responsible for these magnetic field variations.