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Coronal Magnetic Field Measurements along a Partially Erupting Filament in a Solar Flare YUQIAN WEI, BIN CHEN, SIJIE YU, HAIMIN WANG, JU JING, DALE GARY, New Jersey Institute of Tech — Magnetic flux ropes are the centerpiece of solar eruptions. Direct measurements for the magnetic field of flux ropes are crucial for understanding the triggering and energy release processes, yet they remain heretofore elusive. Here we report microwave imaging spectroscopy observations of an M1.4-class solar flare that occurred on 2017 September 6, using data obtained by the Expanded Owens Valley Solar Array. This flare event is associated with a partial eruption of a twisted filament observed in Hα by the Goode Solar Telescope at the Big Bear Solar Observatory. The extreme ultraviolet (EUV) and X-ray signatures of the event are generally consistent with the standard scenario of eruptive flares, with the presence of double flare ribbons connected by a bright flare arcade. Intriguingly, this partial eruption event features a microwave counterpart, whose spatial and temporal evolution closely follow the filament seen in Hα and EUV. The spectral properties of the microwave source are consistent with nonthermal gyrosynchrotron radiation. Using spatially resolved microwave spectral analysis, we derive the magnetic field strength along the filament spine, which ranges from 600–1400 Gauss from its apex to the legs. The results agree well with the non-linear force-free mag

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