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Origin And Evolution Of Multi-Band Variability In The Radio Source 4C 38.41

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The flat spectrum radio quasar 4C 38.41 showed a significant increase of its radio flux density during the period 2012 March - 2015 August which correlates with gamma-ray flaring activity. Multi-frequency simultaneous VLBI observations were conducted as part of the interferometric monitoring of gamma-ray bright active galactic nuclei (iMOGABA) program and supplemented with additional monitoring observations at various bands across the electromagnetic spectrum. The epochs of the maxima for the two largest gamma-ray flares coincide with the ejection of two respective new VLBI components and the evolution of the physical properties seem to be in agreement with the shock-in-jet model. Derived synchrotron self absorption magnetic fields, of the order of 0.1 mG, do not seem to dramatically change during the flares, and are much smaller, by a factor 10,000, than the estimated equipartition magnetic fields, indicating that the source of the flare may be associated with a particle dominated emitting region. Analysis on the physical properties of the ejected components is performed, suggesting an evolution along the jet.