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Revealing remarkable emission in Abell 1367 with LOFAR and MeerKAT

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Galaxy cluster mergers are the most energetic events dissipating a significant portion of the energy in the ICM through shocks. There is clear evidence that radio relics are related to large cluster merger shocks, however the electron acceleration mechanism is not well understood, in particular, if seed electrons are crucial to enhance the acceleration efficiency. The merging galaxy cluster Abell 1367 hosts several spectacular radio sources, especially a large scale extended diffuse radio emission to the north-west, the bright tailed radio galaxy 3C264, and three in-falling spiral galaxies with tails of stripped gas. Remarkably, the long tails of the spiral galaxies coincides with the extended diffuse emission to the north-west. This nearby cluster could be the first example where spiral galaxies demonstrably provide seed electrons boosting the relic radio emission. In this work we present our LOFAR HBA analysis of the merging galaxy cluster A1367, complemented with results from recent MeerKAT observations at 1.3 GHz. We will discuss the nature of the diffuse radio emission and its classification as radio relic. We will also discuss the interaction of in-falling spiral galaxies with the ICM and whether the tails of the spiral galaxies may be a source of seed electrons that could have been re-energised.