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# Explaining the ANITA events by a $L_e - L_\tau$ gauge model

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The ANITA experiment has registered two anomalous events that can be interpreted as $\nu_\tau$ or $\bar{\nu}_\tau$ with a very high energy of O(0.6)~EeV emerging from deep inside the Earth. At such high energies, the Earth is opaque to neutrinos so the emergence of these neutrinos at such large zenith angles is a mystery. I will present a model that explains the two anomalous events through a $L_e - L_\tau$ gauge interaction involving two new Weyl fermions charged under the new gauge symmetry. We find that, as a bonus of the model, the lighter Weyl fermion can be a dark matter component. We discuss how the ANITA observation can be reconciled with the IceCube and Auger upper bounds. We also demonstrate how this model can be tested in future by collider experiments.

## Collaboration name

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