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## Leptogenesis, dark matter and gravitational waves from discrete symmetry breaking

We analyse a model that connects the neutrino sector and the dark sector of the universe via a mediator  $\Phi$ , stabilised by a discrete Z\_4 symmetry that breaks to a remnant Z\_2 upon  $\Phi$  acquiring a non-zerovacuum expectation value (v $\varphi$ ). The model accounts for the observed baryon asymmetry of the universe via additional contributions to the canonical Type-I leptogenesis. The Z\_4 symmetry breaking scale (v $\varphi$ ) in the model not only establishes a connection between the neutrino sector and the dark sector, but could also lead to gravitational wave signals that are within the reach of current and future experimental sensitivities.

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