Workshop on Beyond Standard Model Physics at η/η'-Factories

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Low-scale dark sectors motivated by the evidence of a stochastic gravitational waves background

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The recently reported evidence of a Stochastic Gravitational Wave Background (SGWB) in the nHz frequency range is in tension with standard astrophysical expectations, motivating the study of new physics beyond the Standard Model. A preferred explanation relies on a supercooled first order phase transition at the 100 MeV - GeV scale. I will present a minimal model that can account for the SGWB, featuring a new U(1) gauge group and a dark scalar that dynamically breaks the symmetry, and discuss how the observed signal constrain the parameter space. Possible extensions of the model required to open new decay channels into the SM particles will also discussed.

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