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Twin e^+e^- , e^-e^- linear colliders with energy recovery (ERLC)

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Recently, a high energy superconducting (SC) e^+e^- linear collider with energy recovery (ERLC) has been proposed, which uses twin RF structures to avoid parasitic collisions inside linacs. Such a collider can operate in a duty cycle (DC) or continuous (CW) modes (if sufficient power is available) with a luminosity of about $10^{36} \text{ cm}^{-2} \text{ s}^{-1}$ at $2E_0 = 250\text{--}500 \text{ GeV}$. In this presentation I will update results on e^+e^- and for the first time consider a e^-e^- twin collider with energy recovery and estimate its achievable luminosity. Such collider is much simpler than an e^+e^- collider and can operate without beam recirculation with luminosity greater than $10^{36} \text{ cm}^{-2} \text{ s}^{-1}$. The twin SC ERLC takes full advantage of linear colliders and is the best collider for studying Higgs properties.

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