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Landscape of Future Accelerators at the Energy and Intensity Frontier (15' + 5')

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This talk will provide an overview of the currently envisaged landscape of charge particle accelerators at the energy and intensity frontiers to explore particle physics beyond the standard model via 1-100 TeV-scale lepton and hadron colliders and multi-Megawatt proton accelerators for short- and long-baseline neutrino experiments. The particle beam physics, associated technological challenges and progress to date for these accelerator facilities (LHC, HL-LHC, future 100 TeV p-p colliders, TeV-scale linear and circular electron-positron colliders, high intensity proton accelerator complex PIP-II for DUNE and future upgrade to PIP-III) will be outlined. Potential and prospects for advanced “plasma-wakefield-based techniques” at the TeV-scale energy frontier and advanced “nonlinear dynamic techniques” at multi-MW level intensity frontier will be touched upon.

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