

## Development of higher performance Nb<sub>3</sub>Sn conductors for the FCC

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Many concepts for advanced accelerator magnets such as those for the Future Circular Collider include superconducting materials beyond the state of the art. To realize the technical goals for such magnets, Nb<sub>3</sub>Sn strands will at least need to have smaller filaments and higher critical current density values than are available today. However, achievement of such high performance may not be sufficient to enable the launch of a new very large accelerator project; such a decision may hinge on cost due to the tremendous scales involved. Thus, while the cost of superconductors has always been important for accelerator projects, more than ever the economics of conductor designs needs to be a focus for materials developers. In our presentation we will review potential pathways to improve the strand performance, and discuss the cost benefits and limitations of high volume production of Nb<sub>3</sub>Sn strands, starting from the situation today with strands in production for the HL-LHC upgrade.

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