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## Recent Work

### **Title**

Correlation between strand parameters and stability

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## **Correlation Between Strand Parameters and Stability\***

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This paper correlates strand stability determined from a short sample current test to various strand parameters (i.e. strand diameter, sub-element diameter, Cu fraction, and the RRR of the Cu stabilizer). For a measurement when the magnetic field is fixed and the sample current is ramped, it has been observed that strands that carry high currents at high fields (greater than 10T) cannot sustain these same currents at low fields (1-3T) when the sample current is fixed and the magnetic field is ramped. This indicates that the present generation of strand being produced for High Energy Physics is susceptible to flux jumps (FJs) in the low field region. To prevent FJ from limiting stand performance and magnet performance, one must have small sub-elements to reduce the energy released during a FJ as well as a low residual resistivity (high residual resistivity ratio RRR) of the Cu stabilizer.

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