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Capacitive Stress Transducers in High-Field Superconducting Magnets CHRISTOPHER BENSON, PETER MCINTYRE, AL MCINTURFF, ANDREW JAISLE, TREY HOLIK, Texas A&M University — The dipoles needed for hadron colliders pose extreme challenges for the distribution of Lorentz stress within the coils. A strategy for stress management has been developed at Texas A&M University. Part of that development utilizes capacitive stress transducers to monitor the Lorentz forces within the coil packages. Constructing repeatable and reliable stress transducers has required the development of new tooling and procedures to streamline fabrication and calibration processes. The design, tooling and fabrication techniques used for capacitive stress transducers will be described along with the effect of improvements on the repeatability and performance of the transducers.

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