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Stress Management and Capacitive Stress Transducers Used in Dipole Magnets CHRISTOPHER BENSON, PETER MCINTYRE, AL MCINTURFF, ANDREW JAISLE, TREY HOLIK, Texas A&M University — Research in accelerator dipole magnet technology is aimed first and foremost to produce as high a magnetic field as possible. However, stresses in the superconducting coil packages from Lorentz forces limit the maximum field. Future dipole magnets are being designed, built, and tested by the Accelerator Research Lab at Texas A&M University which incorporate unique stress management techniques. Within these magnets, custom capacitive pressure transducers are being developed to monitor the Lorentz forces within the coil package. A brief introduction to stress management techniques used in future TAMU magnets will be given, along with the status of current and future research involving tooling and fabrication techniques used in the production of capacitive pressure transducers.

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