A novel divertor cryopumping system has been successfully demonstrated in Alcator C-Mod with a steady-state neutral pressure of 500 mTorr in a fully toroidal loop. The system is designed to minimize LHe usage (2-3 liters/shot) and achieve a pumping throughput of 12,000 liters/s H$_2$. The cryopump installation is performed with minimal interruption of line-of-sight access through C-Mod's vertical ports.

**Cryopump Project Goals**
- Full-scale cryopumping tests
- Remote PLC control interface
- Full toroidal loop in upper divertor, maximizing pumping speed
- Full toroidal loop in upper divertor, maximizing pumping speed

**Cryopump Installation**
- Embedded Langmuir probes for particle flux optimization
- Full toroidal loop in upper divertor, maximizing pumping speed
- Full toroidal loop in upper divertor, maximizing pumping speed

**Cryopump Impact**
- Neutrals are pumped per 3d Monte Carlo Modeling provided design guidance
- Neutrals are pumped per 3d Monte Carlo Modeling provided design guidance
- Neutrals are pumped per 3d Monte Carlo Modeling provided design guidance
- Neutrals are pumped per 3d Monte Carlo Modeling provided design guidance

**Performance Tests**
- Excellent L-he density control at moderate densities
- Effective control of L-he density with a novel upper divertor cryopumping system
- Effective control of L-he density with a novel upper divertor cryopumping system
- Effective control of L-he density with a novel upper divertor cryopumping system

**Summary**
- The cryopumping system has been successfully demonstrated in Alcator C-Mod with a steady-state neutral pressure of 500 mTorr in a fully toroidal loop.
- The system is designed to minimize LHe usage (2-3 liters/shot) and achieve a pumping throughput of 12,000 liters/s H$_2$.
- The cryopump installation is performed with minimal interruption of line-of-sight access through C-Mod's vertical ports.

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