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Computer Simulation and Modeling of CO2 Removal Systems for Exploration 2013-2014

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The Atmosphere Revitalization Recovery and Environmental Monitoring (ARREM) project was initiated in September of 2011
as part of the Advanced Exploration Systems (AES) program. Under the ARREM project and the follow-on Life Support Systems (LSS) project, testing of sub-scale and full-scale systems has been combined with multiphysics computer simulations for evaluation and optimization of subsystem approaches. In particular, this paper will describes the testing and 1-D modeling of the combined water desiccant and carbon dioxide sorbent subsystems of the carbon dioxide removal assembly (CDRA). The goal is a full system predictive model of CDRA to guide system optimization and development.