The development and potential uses of an Adsorption Water Collection System for the Trash Compaction Processing System designed for operation in the International Space Station Express Rack

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The use of adsorption as an alternative to current state of the art water collection and phase separation methods for human space flight is being investigated at NASA Ames Research Center. A system called the Adsorption Water Recovery System was designed to work with the Trash Compaction Processing System. The system uses modular adsorption columns that can be combined both in parallel and series and allow for relatively easy system sizing. The system is intended to be a standalone system that may also be adapted for other applications that involve adsorption. This paper describes the design and potential operating parameters and configurations of the Adsorption Water Recovery System.

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