1126-93-171 **Scott Hansen*** (`shansen@iastate.edu`), Department of Mathematics, Iowa State University, Ames, IA 50011. *Controllability of a basic cochlea model.*

Two variations of a basic model for a cochlea are described which consist of the basilar membrane coupled with a linear potential fluid. The basilar membrane is modeled as an array of oscillators which may or may not include longitudinal elasticity. Approximate controllability with locally distributed control on a portion of the basilar membrane is proved for both models and moreover exact controllability is shown to hold when longitudinal stffness is included. (Received January 12, 2017)