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“Intelligent Shell” Model with Nonideal Electronics¹

T.H. JENSEN, General Atomics, A.M. GAROFALO, Columbia University — The effects of the use of nonideal electronics in an intelligent shell feedback stabilization system [C.M. Bishop, Plasma Phys. Contr. Fusion 31, 1179 (1989)] is investigated numerically using a simple model. The electronics is assumed linear and characterized by a gain as well as lower and upper cutoff frequencies normalized by a characteristic time of the resistive wall. The electronics is considered ideal when the lower cutoff frequencies vanish, the upper cutoff frequencies approach infinity, and when the gain is infinite. The aim of the calculations is to find out how good the nonideal electronics must be to make the stabilizing capability of the system approach that of a system using ideal electronics. The result of the calculations is that it appears possible under “reasonable” circumstances to approach the ideal limit using practical electronics.

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Prefer Oral Session
Prefer Poster Session

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