APPROXIMATING AN INFINITE SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS

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Abstract

This lecture deals with the approximation of an infinite system of ordinary differential equations arising in the study of the propagation of an initial discontinuity governed by a simple conservation law. Earlier numerical results had shown that the truncation of this system at a suitable stage gave rise to accurate results. Here an analytical study is done of the approximation - justifying the truncation and analysing initial conditions for which the procedure is valid.