1067-03-2034 **Peter Buser*** (peter.buser@epfl.ch), Ecole Polytechnique Fédérale, SB-IGAT-GEOM, Station 8, CH-1015 Lausanne, Switzerland, and **Bruno Scarpellini** (bscarpellini@hotmail.com), Professor Bruno Scarpellini, Mathematisches Institut der Universität, Rheinsprung 21, CH-4051 Basel, Switzerland. *Recursive analysis of singular ordinary differential equations.*

The lecture deals with the decision of recursively enumerable sets by analog machines. The "analog machine" is an integration analyzer of Fourier coefficients of real or complex valued functions. The main result to be presented is a characterization of the recursively enumerable sets by Fourier coefficients of recursive analytic functions that are generated by certain ordinary differential equations and elementary operations such as addition multiplication and integration. (Received September 22, 2010)