

Generating new class of exact solutions to the Einstein–Maxwell system

K. Komathiraj

Department of Mathematical Sciences, Faculty of Applied Sciences, South Eastern University of Sri Lanka, Sammanthurai, 3000, Sri Lanka.

Ranjan Sharma

Department of Physics, Cooch Behar Panchanan Barma University, Cooch Behar, 736101, India

Abstract

For a static spherically symmetric charged distribution of matter, the Einstein–Maxwell system is solved. The solution is regular, well behaved and complies with all the requirements of a realistic stellar model. For some specific choices of the model parameters, the new class of solutions is shown to regain some of the previously reported realistic models of compact stars.