



Polarized radiative transfer equation in some special curvilinear coordinate systems

Juris Freimanis (1,2)

(1) Ventspils International Radio Astronomy Centre, Ventspils University College, Ventspils, Latvia (jurisf@venta.lv / +371-63629660), (2) Institute of Mathematical Sciences and Information Technologies, Liepaja University, Liepaja, Latvia

General method to obtain clear expression for the differential operator of polarized radiative transfer equation in arbitrary curvilinear spatial coordinate system was recently described (Freimanis 2010). Now it is applied to several definite coordinate systems, e.g. those with conical, ellipsoidal and toroidal symmetry. It is shown that in some cases the use of nonorthogonal coordinate systems allow to achieve uniform treatment of different symmetries of the scattering medium and the radiation field.