Abstract

In 1889, Goursat noted that conformal transformations in the plane induce correspondences of planar natural mechanical systems including the Hooke-Kepler correspondence. A generalization of this observation has been explained in a note by Darboux right after the note of Goursat, in the same volume of Comptes Rendus, which has been subsequently forgotten. The aim of this talk is to explain this forgotten theorem of Darboux and some of its consequences in classical and quantum mechanical systems.