Abstract

This talk gives an introduction to the Stokes phenomenon of meromorphic linear systems of ODEs. It then proves that the Stokes matrices of linear ODEs at a second order pole give rise to the solutions of Yang-Baxter equations, and thus the representations of quantum groups. Various structures of quantum groups, including crystal basis, representation at roots of unit, quantum symmetric pairs, Yangians and so on can be explained in terms of analysis structures in the Stokes phenomenon.