

The problem of stochastic flow cluster caustics in oxyhydrate systems

© **Boris A. Markov, Yury I. Sukharev,^{*†} and Inna Yu. Apalikova**

Department of Solids and Nanoprocesses. Chelyabinsk State University.

Bratiev Kashirinykh St., 129. Chelyabinsk, 454000. Russia.

Phone: +7 (963) 460-27-75. E-mail: Yuri_Sucharev@mail.ru.

*Supervising author, †Corresponding author

Keywords: *Lagrangian maps, caustics, oxyhydrate gel systems, oxyhydrate noise, colloid clusters, spontaneous pulsation current, spike surge, diffuse double electrical layer.*

Abstract

It is common knowledge that the equation for the motion of particles in a gel is subject to viscous equations of hydrodynamics. This means that a system of equations that describes motions of particles in a gel can be put down in a form that is similar to that of the equations for plasma dynamics. A caustic is a set of degenerated critical points of the function that describes the phenomenon. Therefore, one can find those points by formulating a solution to the equation that is a simple linear equation.