



香港中文大學
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FIRST IN
CHANGE

Analysis and PDE Seminar

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TITLE: Asymptotic analysis of the charge-conserving Poisson-Boltzmann equation with isolated singularities

Date : October 28th, 2021 (Thursday)

Time : 10am-11am (Hong Kong time)
11am-12noon (Korea time)



Link to ZOOM : <https://unist-kr.zoom.us/j/3170659442>

Meeting ID : 317 065 9442

Password : APDE21

Abstract. In this talk, we show the existence, uniqueness and asymptotics of solutions to the charge-conserving Poisson-Boltzmann equation, which describes the ion distribution next to a charged surface. In two dimensional space, solutions can have isolated singularities at prescribed points in the domain. By contrast, for higher dimensional cases, all isolated singularities are removable. As a small parameter tends to zero, solutions to the charge-conserving Poisson-Boltzmann equation develop boundary layers. In the interior of the domain, solutions converge to a constant, which can be calculated by a novel formula. In addition, we give a quantitative description on the asymptotic behaviour of the solutions. This is a joint work with Yong Yu.

All are welcome

This is a joint activity organized by Department of Mathematics, The Chinese University of Hong Kong, Hong Kong; Department of Mathematics, Institute of Mathematical Research, Research Division of Mathematical and Statistical Science, The University of Hong Kong, Hong Kong; and Department of Mathematical Sciences, Ulsan National Institute of Science and Technology, Korea. More details can be found in https://hkumath.hku.hk/~imr/event/CUHK_HKU_UNIST_Analysis_and_PDE/index.php.

