Tau Functions and the Limit of Block Toeplitz Determinants

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Résumé en anglais	A classical way to introduce tau functions for integrable hierarchies of solitonic equations is by means of the Sato–Segal–Wilson infinite-dimensional Grassmannian. Every point in the Grassmannian is naturally related to a Riemann–Hilbert problem on the unit circle, for which Bertola proposed a tau function that generalizes the Jimbo–Miwa–Ueno tau function for isomonodromic deformation problems. In this paper, we prove that the Sato–Segal–Wilson tau function and the (generalized) Jimbo–Miwa–Ueno iso- monodromic tau function coincide under a very general setting, by identifying each of them to the large-size limit of a block Toeplitz determinant. As an application, we give a new definition of tau function for Drinfeld–Sokolov hierarchies (and their generalizations) by means of infinite-dimensional Grassmannians, and clarify their relation with other tau functions given in the literature.
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Liens

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