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Regular Session:

Speaker: Jose Francisco Gomes (IFT-Unesp, Brazil)

Title: *New solitonic solutions for higher grading integrable hierarchies*

Abstract: A generalized framework to accommodate higher graded integrable hierarchies is proposed. Explicit examples of the positive and negative flows of the Chen-Lee-Liu hierarchy and its various reductions, including Burgers hierarchy, are formulated within the framework of Riemann-Hilbert-Birkhoff decomposition with the constant grade two generator. Two classes of vacua, namely zero and no-zero constant vacuum solutions are shown to be admissible. The tau functions for soliton solutions are obtained by a dressing method and vertex operators are constructed for both types of vacua. We are able to select and classify the soliton solutions in terms of the type of vertices involved. A particular set of soliton solutions constructed by a judicious choice of vertices yields in a closed form, the multi soliton solutions for the Burgers hierarchy.