

## CMM PDE Seminar

**Speaker:** Jessica Trespalcios  
DIM – Universidad de Chile

**Title:** "Global Existence and Long Time Behavior in the 1+1 dimensional Principal Chiral Model with Applications to Solitons"

**Abstract:** We consider the 1+1 dimensional vector valued Principal Chiral Field model (PCF) obtained as a simplification of the Vacuum Einstein Field equations under the Belinski-Zakharov symmetry. PCF is an integrable model, but a rigorous description of its evolution is far from complete. Here we provide the existence of local solutions in a suitable chosen energy space, as well as small global smooth solutions under a certain non degeneracy condition. We also construct virial functionals which provide a clear description of decay of smooth global solutions inside the light cone. Finally, some applications are presented in the case of PCF solitons, a first step towards the study of its nonlinear stability.

**March 29, 2022 at 12 p.m.**

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