

SEMINAR OF ANALYSIS

Tuesday March 7, 2023 - Room: CM 1113 at 2 pm

Prof. Amin CHABCHOUB (The University of Sydney - AUS)

will present a seminar entitled:

« Hydrodynamic Solitons and Breathers - From Theory to Applications »

Abstract:

“The formation of wave localizations in nonlinear dispersive media can be described by weakly nonlinear evolution equations such as the nonlinear Schrödinger equation (NLSE). Within the class of exact NLSE breather solutions on a finite background, the hierarchy of rational solutions, localized in both time and space, are considered to provide appropriate prototypes to model extreme wave dynamics on the water surface, plasma and electromagnetic Kerr media. The talk will focus on the applicability and limitations of hydrodynamic solitons and breathers in unidirectional and directional wave systems. The time-reversal invariance and the effect of dissipation on the evolution of such wave packets will be also elaborated upon. Moreover, the critical role of breathers in wave engineering applications will be highlighted”

Lausanne, Marc 6, 2023

JK/rb

Seminars are announced on the Mathematics Section website: <http://memento.epfl.ch/math/>