



# Systems and Control Group Seminar

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Mathematics Department, University of Aveiro

Room Sousa Pinto

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On the single and mixed partial fractional derivatives on  
a rectangle

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## Abstract

In this talk we propose definitions (distinguishable from the standard ones) of single and mixed partial derivatives in a Caputo sense of functions of two variables on the rectangle  $P = [0, a] \times [0, b]$ . Next, we give an integral representation of functions possessing such derivatives. Finally, we apply these derivatives to the study of the existence and uniqueness of solutions to a fractional counterpart of a nonlinear continuous Roesser and Goursat-Darboux type models.

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