



## ERS POSITIONS AND INDIVIDUAL RESEARCH PROJECTS (IRP)

Fellow	Host institution	PhD enrolment	Duration
<i>ESR1</i>	UC3M	Y	<i>36 months</i>
<b>Project Title:</b> New Scheduling Algorithms for Interference Management in Small Cells at millimetre-wave frequencies.			
<b>Objectives:</b> The goal of this project is to design scheduling algorithms that combined with the pre-coders existing in the literature and also being designed by other ESRs, will achieve interference management and cancellation in small cell heterogeneous environments working at mmW frequencies. In particular, hybrid digital-analogue precoding techniques requiring little Channel State Information (CSI) and data sharing will be considered and the scheduling will decide what users to align and how the resources should be shared among the different tiers of the communication in heterogeneous networks with coexistence of small cells and macro-cells. The problem of ensuring continuous coverage under the challenging propagation characteristic of mmW will be tackled by the resource allocation at the different tiers.			
<b>Expected Results:</b> New scheduling algorithms will be developed contributing to increase the capacity of future networks where small cells are densely deployed and mmW frequencies are used to take advantage of the wide spectrum availability. The achieved performance will be analysed by system-level simulations and a selected set of techniques will be prototyped for a proof of concept.			
<b>Enrolment in Doctoral degree(s):</b> Universidad Carlos III de Madrid (UC3M)			
<b>Main (host) supervisor/Contact:</b> Dr. M. Julia Fernandez-Getino (UC3M)			