



UNIVERSITÀ
DI TRENTO

Dipartimento di
Biologia Cellulare, Computazionale e Integrata - CIBIO

17 APRIL

11.30 A.M.

ROOM A109 - POVO1

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CERM - CENTRO DI RISONANZE MAGNETICHE - UNIVERSITÀ DI FIRENZE



● ● **IN-CELL NMR: A POWERFUL APPROACH**
● ● **FOR MOLECULAR CHARACTERIZATION**
● ● **OF FUNCTIONAL PROCESSES**

In-cell NMR, i.e. high-resolution NMR spectra of biomolecules in intact, **living cells**, represents one of the **highest impact applications of magnetic resonance**, as it allows to obtain information on the conformational and **functional properties of biomolecules** and their **interactions at atomic resolution** in conditions as close as possible to the physiological ones.

Furthermore it is powerful for **drug screening** as it allows the **analysis in real time at cellular level, in human living cells**. Methodological aspects need to be developed and implemented to address the various critical aspects of these systems **from the NMR point of view**: from the low sensitivity to the short life time of the sample, to the broadening of the signals, often beyond detection. Furthermore, the selective detection of the biomolecules of interest among the myriad of those present in the cell also needs to be addressed. The **innovative approaches towards these challenges** will be discussed, and a few examples of the striking power of this method will be presented with particular focus on metal homeostasis in the cells and for drug screening applications.