



CENTRO DE  
**MATEMÁTICA**  
UNIVERSIDADE DO PORTO

# CMUP Informal PhD Seminar

2019/2020 – **SESSION 4**

DATE: **MONDAY, NOVEMBER 18, 16H30**

PLACE: **ROOM 1.08** (BUILDING FC1, FCUP)

## PROGRAM:

**16h30** - Luísa Castro (GUEST SPEAKER – Researcher at INESC TEC, Porto)

*A spectral analysis-based approach for the prediction of fetal acidemia.*

### Abstract:

In this talk I will shortly present a recent result from our team. Our objective was to apply a new method of classification, which is based on spectral analysis, in foetal heart rate (FHR) traces to predict foetal acidosis diagnosed with umbilical arterial blood  $\text{pH} \leq 7.05$ . Fast Fourier transform was applied to a real database for the classification approach. To evaluate the models, sensitivity, specificity, and area under the receiver operating characteristic (ROC) curve were used. The proposed methodology relies exclusively on the spectral frequency decomposition of the FHR signal. Likewise, and after further successful validation in more datasets, this approach can be incorporated easily in clinical practice due to its simple implementation.

**17h15** - Coffee break



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