![LIP logo]

Laboratório de Instrumentação e Física Experimental de Partículas

Competence Center - Big Data

ATTENDEES (via zoom)

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NOTES

- **Agenda:** https://indico.lip.pt/event/396/

- **Introduction**:
    - LIP School and Symposium on Data Sciences next week (Lisbon, 12-16 March 2018). Please attend – in particular the workshop will provide an excellent opportunity to contact with private companies and other colleagues working on data sciences in Portugal.
    - A server dedicated to the training of ML methods is being setup in Minho. Contact Henrique Carvalho (hcarvalho@lip.pt) if you want an account.

- **Celso Franco – Journal Club: Unsupervised Machine Learning with Self-Organizing Maps and K-Means algorithms**
    - Self organizing maps (SOM) are artificial neural networks composed by a grid of output neurons connected to an input layer (i.i no hidden layers).
    - Allows for unsupervised learning
    - All the neurons compete for each training example. The end result is a 2D weight map that approximates the data distribution.
    - SOMPY implementation available in github.
    - Few examples discussed.

- Application in HEP: Compass measurement of the Transverse Momentum Dependent PDFs of the proton (and pion). A SOM can be used to separate part of the low mass DY events in a model independent way.

NEXT MEETING

Next meeting will be organized in April/early May in date to be defined. Vladimir Solovov has volunteered to organize the next journal club, but we need, as usual, volunteers for the following ones.