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Centro Nazionale di Ricerca in HPC,
Big Data and Quantum Computing



Centro Nazionale di Ricerca in HPC,
Big Data and Quantum Computing

Welcome to the workshop

"Quasi-Interactive Analysis of Big Data with High Throughput"

Tommaso Diotallevi (UniBO)

Aula D - 8th January 2025

Introduction

- Welcome to the workshop on "**Quasi-Interactive Analysis of Big Data with High Throughput**"!!



Workshop room: Aula D - via Irnerio 46
Coffee Breaks: IR-0A meeting room (just in front).
Dipartimento Fisica e Astronomia UniBO.



Agenda:

<https://agenda.infn.it/event/44199/>

Visit to the technopole



Timetable

- First part **open** to everyone, with lectures and hands-on covering aspects on distributed data analysis with ROOT and pure Python.

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14:00	Welcome and useful information <i>Aula D, Bologna</i>	<i>Tommaso Diotallevi</i> 14:30 - 14:40
	Introduction to high rate analysis <i>Aula D, Bologna</i>	<i>Tommaso Diotallevi</i> 14:40 - 15:00
15:00	Platforms for high rate analysis <i>Aula D, Bologna</i>	<i>Tommaso Tedeschi</i> 15:00 - 15:20
	Declarative framework for analysis definition and implementation <i>Aula D, Bologna</i>	<i>Paolo Mastrandrea</i> 15:20 - 15:40
	Declarative approach in HEP with ROOT <i>Aula D, Bologna</i>	<i>Vincenzo Eduardo Padulano</i> 15:40 - 16:10
16:00	Coffee break <i>Sala IR-0A, Bologna</i>	16:10 - 16:30
17:00	Hands on session	
18:00	<i>Aula D, Bologna</i>	16:30 - 18:30

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09:00	Python analysis with Scikit-HEP <i>Aula D, Bologna</i>	<i>Davide Valsecchi</i> 09:00 - 09:40
	Hands on session <i>Aula D, Bologna</i>	09:40 - 10:00
10:00	Coffee break <i>Sala IR-0A, Bologna</i>	10:00 - 10:20
	Hands on session	
11:00		
12:00	<i>Aula D, Bologna</i>	10:20 - 12:20
	Wrap up of public session and next steps <i>Aula D, Bologna</i>	<i>Tommaso Diotallevi</i> 12:20 - 12:40



Timetable

- Second part **restricted** to the CMS community, covering specific analyses' overview as well as future perspectives given by the collaboration side-groups.

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	Start of Experiment Session (closed)	13:40 - 13:55
14:00	VBS searches in RDF <i>Aula D, Bologna</i>	Tommaso Tedeschi 13:55 - 14:30
	Detector performance analyses with RDF <i>Aula D, Bologna</i>	Tommaso Diotallevi 14:30 - 15:05
15:00	Top searches with RDF <i>Aula D, Bologna</i>	Antimo Cagnotta 15:05 - 15:40
	Hyperparameter Optimization for Deep Learning Models Using High Performance Computing <i>Aula D, Bologna</i>	Muhammad Numan Anwar 15:40 - 16:00
16:00	Coffee break <i>Sala IR-0A, Bologna</i>	16:00 - 16:20
	Tau -> 3μ with RDF <i>Aula D, Bologna</i>	Federica Maria Simone 16:20 - 16:55
17:00	CI/CD on analysis facility with mkShapesRDF <i>Aula D, Bologna</i>	Matteo Bartolini 16:55 - 17:30
	PocketCoffee example <i>Aula D, Bologna</i>	17:30 - 18:05
18:00	CMS session - Office hour and open discussion <i>Aula D, Bologna</i>	18:05 - 18:45

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09:00	Introducing the session <i>Aula D, Bologna</i>	Daniele Spiga 09:00 - 09:10
	How to support advanced use cases: Technological highlights <i>Aula D, Bologna</i>	Diego Ciangottini 09:10 - 09:35
	Advanced use cases: a work in progress activity <i>Aula D, Bologna</i>	Raffaele Gerosa 09:35 - 10:00
10:00	Coffee break <i>Sala IR-0A, Bologna</i>	10:00 - 10:20
	Wrap-up <i>Aula D, Bologna</i>	Daniele Spiga 10:20 - 11:20
11:00	Open Discussion <i>Aula D, Bologna</i>	11:20 - 12:35
12:00		
13:00	Closing remarks <i>Aula D, Bologna</i>	Tommaso Diotallevi 12:45 - 13:00

Some technical information

- **Wi-Fi credentials:** if you cannot access eduroam or other SSIDs, temporary university credentials (AlmaWifi) are available.
Ask to an organizer.

Note: During the 8th morning, some internet disruption can occur (due to scheduled infrastructure works). We apologise for any inconvenience.

Some technical information

- **Request access to the analysis infrastructure:**

If you don't have INFN AAI credentials:

- Please register yourself here: <https://signup.app.infn.it/>
- Connect to this page: <https://userportal.app.infn.it/> with the INFN AAI credentials created before;
- Under "Abilitazioni", activate the options "Verifica identità" and "Risorse IT";
- You have to put your personal information and accept the conditions;
- In the "Richieste di abilitazione" page, put: "CNAF" under "Sede del referente", and "Carmelo Pellegrino" under "Nome del referente". As a message you can put the usual motivation for the workshop. Also accept the IT conditions;
- At this point, you will be contacted by the verification office, for the ID verification;
- Subscribe to the "Corso di sicurezza informatica - BASE" at [this link](#) (the course can be done after the workshop, with more time).

Some technical information

- **Request access to the analysis infrastructure:**

If you have INFN AAI credentials (or you just obtained them):

- Go to the IAM ICSC homepage: <https://iam-icsc.cloud.infn.it/> and click on the “Apply for an account” button. At this point, login with the AAI credentials;
- Fill in your information in the registration page, using as motivation “Participation to the ‘Quasi-Interactive Analysis of Big Data with High Throughput’ workshop”;
- An admin will approve your request;
- Once your account is approved, in the IAM homepage click on the “Join a group” button (under Group requests). Here, request to join the group [icsc/users/spoke2analysisfacility](#) using the same motivation as above.

The background is a deep blue gradient. On the left side, there are numerous thin, glowing blue lines that curve and converge towards the center, creating a sense of depth and movement. Interspersed among these lines are small, bright blue particles or dots, some of which appear to be in motion, leaving faint trails. The overall effect is reminiscent of a digital data stream or a futuristic tunnel.

Enjoy the Workshop!