

# DOTTORATO IN FISICA DEGLI ACCELERATORI

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**SAPIENZA**  
UNIVERSITÀ DI ROMA



# GENERAL INTRO

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- PhD programme oriented to the **Accelerator Theory and Practice** (the only one in Italy)
- **Based at Sapienza Univ. but intended as a National PhD**
- **Funded by INFN (6 grants) and Sapienza (1 grant)**
- Lectures give **principles of the Accelerator Theory and to their applications** in the different domains of this science
- Students required to follow both **theoretical and practical lectures** in the INFN laboratories
- **Possibility to follow classes from remote**
- **Research activity can be performed in remote sites**
- **All info in**
  - **[https://phd.uniroma1.it/web/FISICA-DEGLI-ACCELERATORI\\_nD3504\\_IT.aspx](https://phd.uniroma1.it/web/FISICA-DEGLI-ACCELERATORI_nD3504_IT.aspx)**

# PHD IN A NUTSHELL

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- **First year:**
  - follow **classes**: total of about 144 hours (18 credits)
  - follow **seminars** (mandatory)
  - present (by end of December) **study plan** to be approved by the Teaching Board
- **Second year:**
  - (beginning of the year) prepare a **thesis project**
  - (end of the year) present a **seminar on the project**
  - based on both, **admission to the third year** by Board
  - **hand's on** training
- **Third year:**
  - **work on PhD thesis**
  - **final seminars in October/November**
  - **thesis defense in January/February**

# COURSES AND SEMINARS

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- **1<sup>st</sup> semester:**
  - **JUAS** (I and II courses). **Please register!**, deadline is Nov 27. PhD school will pay for the attendance (9+9 credits)
- **2<sup>nd</sup> semester:**
  - **Alesini:** “Physics, Technology and Applications of Linear Accelerators” (3), Mar-May
  - **Ferrario:** “Physics of High Brilliance Accelerators” (6), Mar-May
  - **Gallo:** “Accelerator Physics Laboratory” (4) Apr-Jun (TBC because of Covid)
  - **Variola et. al.:** “Particles and Photon sources” (4) Apr-Jun (TBC)
  - **Seminars**
- **3<sup>rd</sup> semester:**
  - **Seminars**
- **4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup> semester:**
  - **Hands-on**
- **More courses available (from PhD and Master in Physics)**
  - ▶ **Complete list (last year):** [https://phd.uniroma1.it/web/OFFERTA-FORMATIVA-EROGATA-FISICA-DEGLI-ACCELERATORI\\_nG3504\\_IT.aspx](https://phd.uniroma1.it/web/OFFERTA-FORMATIVA-EROGATA-FISICA-DEGLI-ACCELERATORI_nG3504_IT.aspx)

# THESIS TOPICS

- **Today's presentations will be used as repository of proposals**

10:30	→ 10:40	<b>Terahertz Acceleration of Particles</b> Speakers: Massimo Petrarca (ROMA1), Stefano Lupi (ROMA1)	🕒 10m
10:40	→ 10:50	<b>Rivelatori per alti flussi di neutroni ad n_TOF (CERN)</b> Speaker: Salvatore Fiore (ROMA1)	🕒 10m
10:50	→ 11:00	<b>Tesi disponibili presso i LNF in collaborazione con il CERN</b> Speaker: Roberto Cimino (LNF)	🕒 10m
11:00	→ 11:10	<b>Tesi disponibili presso SBAI in collaborazione con il CERN</b> Speaker: Mauro Migliorati (ROMA1)	🕒 10m
11:10	→ 11:20	<b>Tesi disponibili presso SPARC_LAB</b> Speakers: Federico Nguyen (LNF), Massimo Ferrario (LNF)	🕒 10m
11:20	→ 11:30	<b>Tesi in ambito muon collider (TBC)</b>	🕒 10m
11:30	→ 11:40	<b>Accelerazione di particelle tramite laser intensi ed applicazioni (biomediche, materiali, beni culturali, ambiente)</b> Speakers: Patrizio Antici (INRS), Patrizio Antici (Institut Lumiere Extreme)	🕒 10m
11:40	→ 11:50	<b>Proposte di tesi da Milano</b> Speakers: Andrea Renato Rossi (MI), Luca Serafini (MI)	🕒 10m
11:50	→ 12:00	<b>Diagnostica per fasci ad SPS (CERN)</b> Speaker: Dr Fabrizio Murtas (LNF)	🕒 10m
12:00	→ 12:10	<b>Tesi al CNAO</b> Speaker: Dr Marco Pullia (CNAO)	🕒 10m
12:10	→ 12:20	<b>PHD Theses at DAFNE</b> Speakers: Alessandro Drago (LNF), Catia Milardi (LNF)	🕒 10m