



**Master on Physics of the Universe:
Cosmology, Astrophysics, Particles and
Astroparticles**

$$\begin{aligned}\mathcal{L} = & -\frac{1}{4}F_{\mu\nu}F^{\mu\nu} \\ & + i\bar{\Psi}\not{D}\psi \\ & -\frac{1}{2}D_{\mu}\Phi^{\dagger}D^{\mu}\Phi - V(\Phi) \\ & + \bar{\Psi}_L\hat{Y}\Phi\Psi_R + h.c.\end{aligned}$$

Opening Day, 5th September

10:00 Seminar “Searching for sub-GeV particle dark matter”
by Konstantinos Nikolopoulos (University of Hamburg/University of Birmingham)

12:00 Presentation of the research groups of CAPA:

12:00 Astroparticle Physics and Instrumentation

10:30 The Standard Model and Beyond: Symmetry, Gravity
and Dark Matter

13:00 Cosmology and Astrophysics at UNIZAR

On-
line

Seminario de Física Nuclear



**Centro de Astropartículas y
Física de Altas Energías
Universidad Zaragoza**