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# XX Mexican School on Particles and Fields 2023

## Tuesday 31 October 2023

### Short talks: Dark Matter and Heavy Ions (15:10-16:10)

| time  | title                                                                                                    | presenter                                                                                                  |
|-------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| 15:10 | LHC constraints on long-lived particles in the dark S3 model.                                            | DR. BARRADAS GUEVARA, JOSÉ ENRIQUE; DR. ESPINOZA-HERNANDEZ, MARIA CATALINA; DR. MONDRAGON CEBALLOS, MYRIAM |
| 15:25 | Renormalization of the U(1) gauge theory for tensor dark matter in arbitrary gauge: preliminary results. | MR. RANGEL PANTOJA, ARMANDO DE LA CRUZ; PROF. NAPSUCIALE, MAURO                                            |
| 15:40 | Pion screening mass in a magnetized medium                                                               | RENDON, JESUS                                                                                              |
| 15:55 | Comparison of particle ratios for two event generators at NICA energies                                  | MR. GUZMÁN CASTRO, RODRIGO                                                                                 |

### Short talks: Phenomenology (15:10-16:10)

| time  | title                                                                                                                                                       | presenter                                    |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 15:10 | Limits on $ V_{td} $ from single-top production at $\sqrt{s}$ colliders                                                                                     | MR. PAREDES CRUZ, EDIER                      |
| 15:25 | Is the $\Omega(2137)$ a molecular state?                                                                                                                    | DR. TOLEDO, GENARO                           |
| 15:40 | Top quark flavor changing couplings at a muon collider.                                                                                                     | MR. AKE, DANIEL                              |
| 15:55 | SIZING THE DOUBLE POLE RESONANT ENHANCEMENT IN $e^+e^- \rightarrow \pi^0 \pi^0 \gamma$ CROSS SECTION AND $\tau \rightarrow \pi \pi^0 \nu \tau \gamma$ DECAY | MR. ROJAS RAMOS, ANTONIO; DR. TOLEDO, GENARO |

### Short talks: Neutrino and Astroparticles (17:30-18:30)

| time  | title                                                                                         | presenter                                                                           |
|-------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 17:30 | Perspectives for the Coherent Elastic Neutrino-Nucleus Scattering study by isotopic detectors | DUQUE HERRERA, LAURA; DR. MIRANDA ROMAGNOLI, OMAR                                   |
| 17:45 | Neutrino Mass and Mixing Models                                                               | MR. TOLEDO MENDEZ, ISANGEL; DR. PEREZ-LORENZANA, ABDEL                              |
| 18:00 | Two-loop neutrino masses in a broken B-L symmetry                                             | MR. MARTINEZ RAMIREZ, ROLANDO; PEINADO, EDUARDO; MR. GARCIA DE LA VEGA, LEON MANUEL |
| 18:15 | A photohadronic interpretation of the H.E.S.S. afterglow observations from GRB 221009A        | DR. SAHU, SARIRA; MR. MEDINA CARRILLO, BENJAMIN                                     |

**Short talks: Flavour Physics and Machine Learning (17:30-18:30)**

| time  | title                                                                      | presenter                                                               |
|-------|----------------------------------------------------------------------------|-------------------------------------------------------------------------|
| 17:30 | New modular flavor phenomenology arising from 2D3 symmetries               | MR. ARRIAGA-OSANTE, CARLOS; DR. LIU, XIANG-GAN; DR. RAMOS-SANCHEZ, SAUL |
| 17:45 | Lepton Flavor Violation from diphoton effective operators                  | DR. MARÍN, MARCELA                                                      |
| 18:00 | $\tau \rightarrow \pi \eta \nu \tau$ decay induced by QED one-loop effects | MR. PORTILLO, DIEGO                                                     |
| 18:15 | Boosting di-Higgs searches at the LHC with ParticleNet algorithm           | DR. CASTAÑEDA, ALFREDO                                                  |

# Friday 03 November 2023

## Short talks: Quantum Field Theory (16:40-17:40)

| time  | title                                                                                             | presenter                                            |
|-------|---------------------------------------------------------------------------------------------------|------------------------------------------------------|
| 16:40 | The $H^*ZZ$ vertex                                                                                | MR. HERNÁNDEZ JUÁREZ, ALAN IGNACIO                   |
| 16:55 | Soluciones de energía negativa y taquiónicas en ecuaciones de Weinberg-Tucker-Hammer para espín 1 | PROF. DVOEGLAZOV, VALERIY                            |
| 17:10 | Towards two-loop master integrals for $ttH$                                                       | MR. KRAUS, MANFRED                                   |
| 17:25 | Symmetries and Interactions of $N=1$ Supergravity from the Constructive approach                  | MR. JONATHAN, REYES PÉREZ; DR. J. LORENZO, DÍAZ CRUZ |

## Short talks: Hadron Physics (16:40-17:40)

| time  | title                                                            | presenter                       |
|-------|------------------------------------------------------------------|---------------------------------|
| 16:40 | Extraction of mesons form factors in a symmetry preserving model | DR. HERNÁNDEZ-PINTO, ROGER JOSÉ |
| 16:55 | Pion screening mass in a magnetized medium                       | RENDON, JESUS                   |