

XXIV Meeting of Physics 2024



Report of Contributions

Contribution ID : 1

Type : **not specified**

Energias Renovables -

Contribution ID : 2

Type : **Poster**

New machine learning techniques for anomaly detection in the Global Trigger of the Level-1 Trigger system of the CMS experiment at CERN

At LHC, two main approaches test the validity of the Standard Model (SM): comparing precise measurements of SM processes with theoretical predictions and conducting direct searches for new particles predicted by models beyond the SM (BSM). These direct searches rely on fully supervised analyses targeting specific BSM scenarios, effective only if the correct model is tested. However, many BSM searches have yielded negative results, suggesting that unanticipated scenarios may exist. The vast data generated at the LHC, with 40 million collisions per second but only ~1000 events stored per second, exacerbates this challenge.

The Level-1 Trigger (L1T) processes collisions at 40 MHz, using specialized hardware to reduce the rate to 100 kHz. The Global Trigger is the final step of the CMS L1T system and runs a trigger menu called the L1 menu, which defines early event selection criteria, plays a critical role in capturing SM and BSM signals. However, model-dependent algorithms often exclude low-energy or unusual events, missing important signals have been implemented.

Unsupervised ML techniques have gained attention new physics detection in a model-agnostic, data-driven way. A fast, quantized anomaly detection trigger algorithm based on variational autoencoders is currently in use in the L1T is presented.

Primary author(s) : Mr PAUCAR, Sebastian (UNI)

Co-author(s) : Dr SOLANO SALINAS, Carlos Javier (Universidad Nacional de Ingenieria)

Presenter(s) : Mr PAUCAR, Sebastian (UNI)

Session Classification : Coffee break & posters

Contribution ID : 6

Type : **not specified**

Energías renovables

Contribution ID : 7

Type : **not specified**

Proyecto Hidógeno verde en la UNI

Presenter(s) : Dr TALLEDO, Arturo

Contribution ID : 8

Type : **not specified**

Energías renovables

Presenter(s) : Dr GÓMEZ, Mónica

Contribution ID : 9

Type : **not specified**

Proyecto Hidrógeno verde en la UNI

Monday, 11 November 2024 10:30 (30)

Presenter(s) : Dr TALLEDO, Arturo (UNI)

Session Classification : Energías renovables

Contribution ID : **10**

Type : **not specified**

Innovación en textiles funcionales: protección uv y propiedades antimicrobianas

Monday, 11 November 2024 11:30 (30)

Presenter(s) : Dr SOLÍS, José (UNI)

Session Classification : Energías renovables

Contribution ID : 11

Type : **not specified**

Posibles estructuras en la ionósfera observadas con la técnica de radar de apertura sintética

Monday, 11 November 2024 12:00 (30)

Presenter(s) : Dr MACOTELA, Liliana (Norwegian Research Centre)

Session Classification : Física del clima

Contribution ID : 12

Type : **not specified**

Solar storms and geomagnetic induced currents

Monday, 11 November 2024 14:00 (30)

Presenter(s) : Dr SALINAS, Ener

Session Classification : Física Aplicada y Computacional

Contribution ID : **13**

Type : **not specified**

Nanotecnología

Monday, 11 November 2024 14:30 (30)

Presenter(s) : Dr LA ROSA, Andrés

Session Classification : Física Aplicada y Computacional

Contribution ID : 14

Type : **not specified**

Impacto del cambio climático sobre eventos extremos en el mar peruano

Monday, 11 November 2024 15:00 (30)

Presenter(s) : Dr CHAMORRO, Adolfo (PUCP)

Session Classification : Física Aplicada y Computacional

Contribution ID : 15

Type : **not specified**

Quantum Machine Learning

Monday, 11 November 2024 15:30 (30)

Presenter(s) : Dr JANAMPA, Gino

Session Classification : Física Aplicada y Computacional

Contribution ID : 16

Type : **not specified**

Reconstrucción 3D de nanopartículas a partir de imágenes HAADF- STEM usando Machine Learning

Monday, 11 November 2024 16:30 (30)

Presenter(s) : Dr ALANIA, Marcos (UNI)

Session Classification : Física Aplicada y Computacional

Contribution ID : 17

Type : **not specified**

Relaves mineros usados como materia prima para elaborar materiales de construcción y una propuesta para mitigar el impacto social en la población

Tuesday, 12 November 2024 10:00 (30)

Presenter(s) : Dr PEREYRA, Patrizia (PUCP)

Session Classification : Física Nuclear y Médica

Contribution ID : **18**

Type : **not specified**

Aplicaciones a la medicina

Tuesday, 12 November 2024 10:30 (30)

Presenter(s) : Dr RUEDA, Daniel (UNI)

Session Classification : Física Nuclear y Médica

Contribution ID : **19**

Type : **not specified**

La Física y el Acelerador de Partículas en la industria farmacéutica

Tuesday, 12 November 2024 11:30 (30)

Presenter(s) : Dr LAZO, Pedro

Session Classification : Física Nuclear y Médica

Contribution ID : 20

Type : **not specified**

Innovaciones e impacto de la física de radiaciones en la agricultura y agroexportación

Tuesday, 12 November 2024 12:00 (30)

Presenter(s) : Mr VARGAS, Johnny (IPEN)

Session Classification : Física Nuclear y Médica

Contribution ID : 21

Type : **not specified**

Visita técnica a la planta de hidrógeno verde @UNI

Session Classification : Física Nuclear y Médica

Contribution ID : **22**

Type : **not specified**

Tema nuclear

Presenter(s) : AYALA, Jorge (UNSAA)

Session Classification : Física Nuclear y Médica

Contribution ID : 23

Type : **not specified**

Aplicaciones del reactor nuclear RP-10 en física de neutrones

Tuesday, 12 November 2024 14:30 (30)

Presenter(s) : Mr BALTUANO, Óscar (UNMSM)

Session Classification : Física Nuclear y Médica

Contribution ID : 24

Type : **not specified**

Principios de protección radiológica y manejo seguro de la radiación en el entorno laboral de medicina nuclear

Tuesday, 12 November 2024 15:00 (30)

Presenter(s) : Mr PONCE, Edgar

Session Classification : Física Nuclear y Médica

Contribution ID : 25

Type : **not specified**

Observatorio nuclear: resurgimiento de la energía nuclear

Tuesday, 12 November 2024 15:30 (30)

Presenter(s) : Dr PÁUCAR, Rolando (IPEN)

Session Classification : Física Nuclear y Médica

Contribution ID : 26

Type : **not specified**

Mesa redonda: Aplicaciones de Física Nuclear

Tuesday, 12 November 2024 16:30 (30)

Presenter(s) : Dr SÁNCHEZ, Heriberto; AYALA, Jorge; Dr PÁUCAR, Rolando; Dr PETRICK, Susana

Session Classification : Mesa Redonda

Contribution ID : 27

Type : **not specified**

Chorros de agujeros negros a toda escala

Wednesday, 13 November 2024 09:00 (30)

Presenter(s) : Dr CALISTRO, Gabriela

Session Classification : Física Teórica y Experimental

Contribution ID : 28

Type : **not specified**

El experimento SWGO

Wednesday, 13 November 2024 10:30 (30)

Presenter(s) : Mr OTINIANO, Luis (CONIDA)

Session Classification : Física Teórica y Experimental

Contribution ID : 29

Type : **not specified**

Vectorizacion en teoría cuantica

Wednesday, 13 November 2024 09:30 (30)

Presenter(s) : Dr MEJÍA, Bernabé (UNFV)

Session Classification : Física Teórica y Experimental

Contribution ID : 30

Type : **not specified**

Detección de Cáncer de Mama mediante SERS: El Potencial de los Nanocompuestos de Oro y Sílice

Wednesday, 13 November 2024 11:30 (30)

Presenter(s) : Dr SANTACRUZ, Karla (UNISON)

Session Classification : Física Teórica y Experimental

Contribution ID : 31

Type : **not specified**

Variabilidad fotométrica de V357 Her: Campaña OAUNI 2023

Wednesday, 13 November 2024 12:00 (30)

Presenter(s) : Dr PEREYRA, Antonio (IGP)

Session Classification : Física Teórica y Experimental

Contribution ID : 32

Type : **not specified**

Cloud-HEP: cosmología y física de altas energías en la nube

Wednesday, 13 November 2024 14:30 (30)

Presenter(s) : Dr GÁLVEZ, Tomás (UTEC)

Session Classification : Física Teórica y Experimental

Contribution ID : 33

Type : **not specified**

Space Physics and Scientific Computing: Some potential projects and collaborations

Wednesday, 13 November 2024 14:00 (30)

Presenter(s) : Dr ROJAS, Enrique (MIT)

Session Classification : Física Teórica y Experimental

Contribution ID : 34

Type : **not specified**

Superradiancia cuántica para el espaciotiempo de RNdS

Wednesday, 13 November 2024 15:00 (30)

Presenter(s) : Dr SÁNCHEZ, Renato (UTEC)

Session Classification : Física Teórica y Experimental

Contribution ID : 35

Type : **not specified**

Radio Observatorio de Jicamarca - IGP

Wednesday, 13 November 2024 10:00 (30)

Presenter(s) : SCIPION, Danny (IGP)

Session Classification : Física Teórica y Experimental

Contribution ID : **39**

Type : **not specified**

Estado de la construcción del tomógrafo de muones @UNI

Wednesday, 13 November 2024 15:30 (30)

Presenter(s) : Dr CASTROMONTE, César (UNI)

Session Classification : Física Teórica y Experimental