

Rapport final

Titre	Exploration des données du cyclotron Arronax pour la détection d'anomalies
Etudiant (Prénom, Nom)	Julien Rioult
Mots clefs (5 environ)	Machine Learning, Accelerator, Anomaly detection, data mining (en français: Apprentissage automatique, accélérateur, détection d'anomalies, exploration de données)

LABORATOIRE IMPLIQUES

Participant	Nom Prénom	Laboratoire
1 (coord.)	Poirier Freddy	GIP Arronax
2	Mateus Diana	LS2N

RESUME "GRAND PUBLIC"

20 lignes maximum

The project aims to join together two fields of specialty within a collaboration between the LS2N and ARRONAX: Machine learning and Accelerator data. The primary goal is the application of mathematical algorithms to the accelerator operation to explore significant events and detect anomalies. For these, millions of data, spanning over 4 years, have been gathered and selected using state-of-the-art computing technics such as principal component analysis and isolation forest. These algorithms have pinpointed outliers within the data and give a first overall long-term landscape of the irradiations.