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DINAMO: Dynamic and INterpretable Anomaly MOnitoring for Large-Scale Particle Physics Experiments

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Data quality monitoring (DQM) in particle physics

- DQM is a gatekeeper against corrupted, anomalous data
- Traditional DQM is manual: shifters compare data with references provided by experts:
 - Human recourses intensive
 - Limited accuracy
 - ➤ Any detector or software updates → challenges adapting to the new operational conditions



- > An **automated DQM** to be:
 - \blacktriangleright Accurate \rightarrow as high as possible
 - ▶ **Specific** → where is the problem
 - ➤ Interpretable → "why" the algorithm decided so

 - ➤ Fast → although analyzing vast amount of data

Automated DQM will help to reduce person power and the amount of inconsistencies



DINAMO



DINAMO: Dynamic and INterpretable Anomaly Monitoring [1]





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Adaptability
Interpretability
Relative simplicity

Simple example of a single 1d histogram:







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Thank you!

More on the poster...

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