
PhD Day, June 2024
Sten Åstrand



Image credit: Samuel Joseph Hertzog, CERN

Problem 1: process is rare

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More
protons →

Increase frequency

Problem 1: process is rare

$\xrightarrow{\text{More protons}}$

Increase frequency

Problem 2: process is frequent

Problem 1: process is rare

$\xrightarrow{\text{More protons}}$

Increase frequency

Problem 2: process is frequent

$\xrightarrow{\text{Trigger system}}$

Decrease data flow

Problem 1: process is rare

$\xrightarrow{\text{More protons}}$

Increase frequency

Problem 2: process is frequent

$\xrightarrow{\text{Trigger system}}$

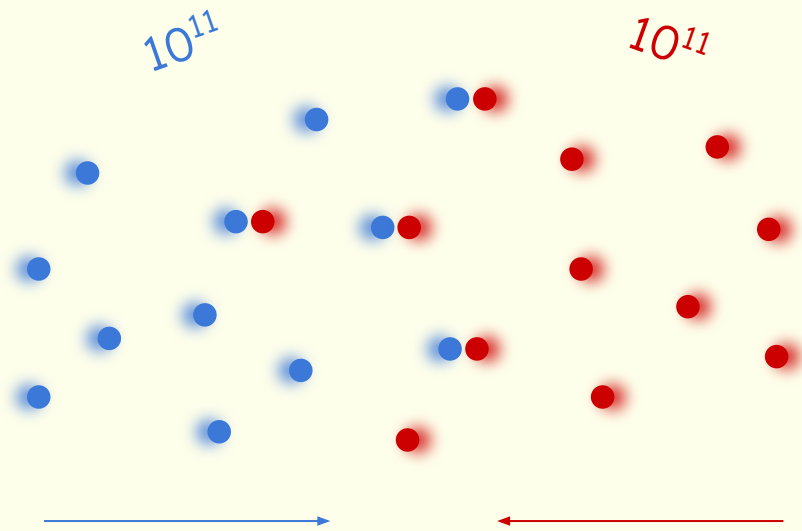
Decrease data flow

Problem 3: process is ???

PHYSICS IN PILEUP

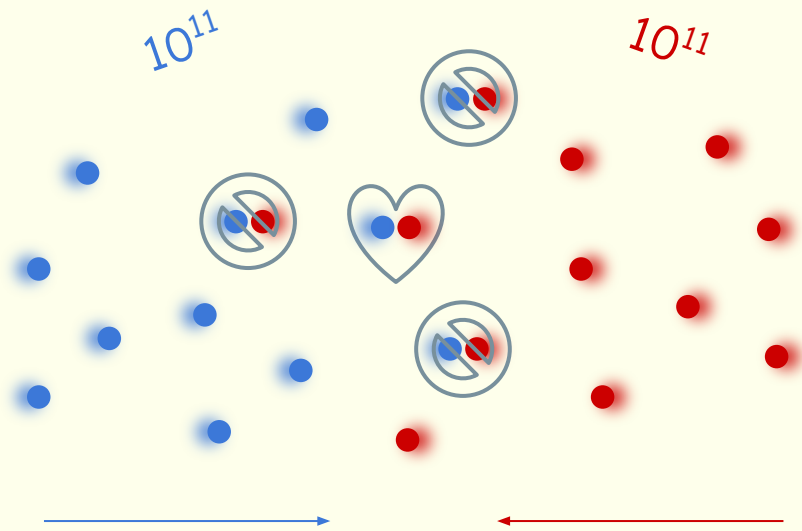
Hidden in plain sight

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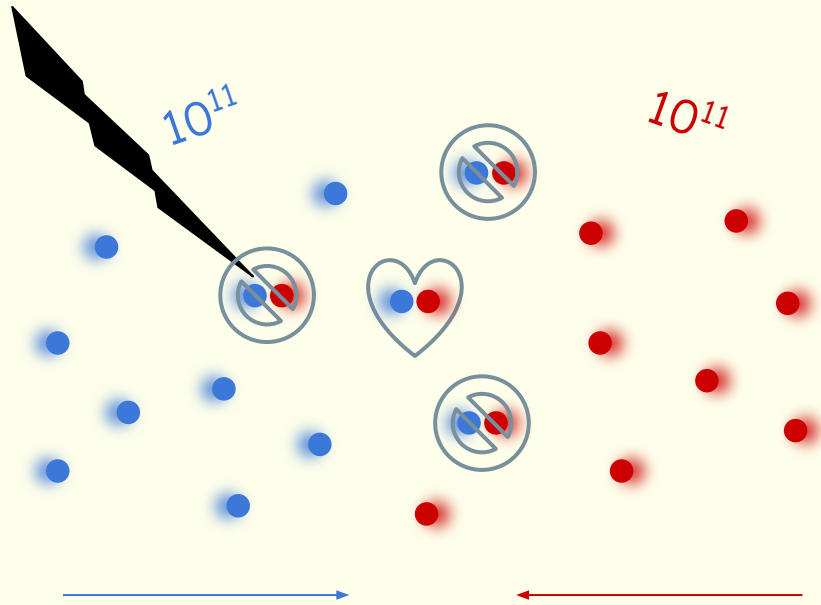
PILEUP

$\langle \mu \rangle = 60$ simultaneous inelastic collisions



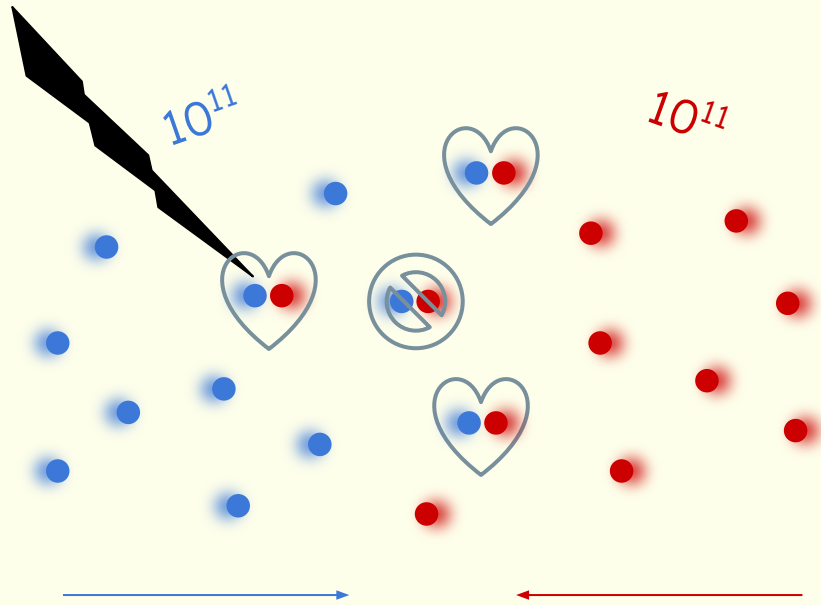
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