4. miniworkshop difrakce a ultraperiferálních srážek

Who we are, and what we do

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Main focus of our research



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Why? The strong force is one of the four fundamental forces of nature along with gravity, electromagnetism and weak.



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How? The structure of matter in terms of quark and gluons changes with the energy (density) of the interaction used to study them.



Equations

Differential equations, **need** initial conditions and predict only **evolution**.



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Equations

Solutions

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Phenomenology: e.g. Dipole amplitudes for multiple observables



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> **Experiment:** Measure those observables

Analyse the data recorded with an experimental facility (ALICE+LHC) to measure those observables

QCD



What have we done in the last year?

Detectors:

Construction and installation of FDD Installation of MFT and development of the QC system

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Analysis of data: New measurements with Run 2 data published Start preparation for Run 3



| 2028 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|--|-------------------------|---------------|-------------------------|------------------------|-------------------------|------|-------------------------|
| J F M A M J J A S O N D J F M A M J J A S O N D J Run 4 | J F M A M J J A S O N D | J FMAMJJASOND | J F M A M J J A S O N D | J FMAMJJASOND Run 5 | J F M A M J J A S O N D | | J F M A M J J A S O N D |



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Predictions have to be more precise New observables are possible

Run 3: much (really much) more data than before

Run 3: completely new software



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Run 3: much (really much) more data than before **Run 3: completely new software** 2022 2020 2021 2019 Long Shutdown 2 (LS2) Run 3



What comes next



| 2032 | 2033 | 2034 | 2035 | 2036 | |
|------------|--------------|--------------|--------------|--------------|--|
| MAMJJASOND | JFMAMJJASOND | JFMAMJJASOND | JFMAMJJASOND | JFMAMJJASOND | |
| | Run 5 | | LS5 | | |

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