Integration of THERMINATOR generator with MpdRoot environment

for NICA project

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MpdRoot

SIMULATION AND ANALYSIS FRAMEWORK

PURPOSE

EXTENSION TO THE CERN’S ROOT SOFTWARE

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THERMINATOR

THERMAL HEAVY ION GENERATOR
MONTE CARLO METHOD
PARTICLE PRODUCTION IN RELATIVISTIC HEAVY-ION COLLISIONS
SPS, RHIC, OR LHC AND NICA IN THE FUTURE
THERMAL MODELS OF PARTICLE PRODUCTION WITH SINGLE FREEZE-OUT

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Our progress

Idea -> Knowledge -> Tools -> Execution

Final Form

PROBLEMS

SOLUTIONS
Our progress

➢ Lack of knowledge
Our progress

- Idea
- Knowledge
- Tools
- Execution

➢ Lack of knowledge – solved
Our progress

➢ Lack of knowledge – solved
➢ Update of MpdRoot
Our progress

- Lack of knowledge – solved
- Update of MpdRoot – solved

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Our progress

➢ Lack of knowledge – solved
➢ Update of MpdRoot – solved
➢ Multi-threaded analysis
Our progress

➢ Lack of knowledge – solved
➢ Update of MpdRoot – solved
➢ Multi-threaded analysis – unsolved
Results and perspectives

Counts distribution in function of pions’ transverse momentum

\( p_T \) of \( \pi \)

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<thead>
<tr>
<th>( h_{pt\pi} )</th>
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<tbody>
<tr>
<td>Entries</td>
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<tr>
<td>Mean</td>
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<tr>
<td>Std Dev</td>
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Results and perspectives

Counts distribution in function of protons’ transverse momentum

\[ p_T \text{ of } p \]

- Entries: 35469
- Mean: 0.07824
- Std Dev: 0.109

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Results and perspectives

Monte Carlo points
Results and perspectives

Monte Carlo points
Results and perspectives
Results and perspectives

Documentation of runTherm.C macro

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Documentation of our main macro
Thank you for your attention