ENERGY SCAN PROGRAM
WITH LIGHT IONS

- WHY?
- EXISTING DATA
- WHAT IS NEEDED?
- WHO/WHERE/WHEN CAN DO IT?
- A POSSIBLE NA49 STRATEGY

M.G. / H.S.
WHY?

![Graph showing $\langle K^+ \rangle / \langle \pi^+ \rangle$ vs. $\sqrt{s_{NN}}$ (GeV)].

**OBVIOUS, IMPORTANT QUESTION:**

**HOW DOES THE EXCITATION FUNCTION EVOLVE FROM** $f(\sqrt{s}, p+p)$ **TO** $f(\sqrt{s}, p\bar{p}+p\bar{p})$ ??

FIRST RESULTS FROM SPS AND AGS SUGGEST FAST SATURATION WITH A

**NEED FOR ENERGY SCAN WITH LIGHT IONS**
<table>
<thead>
<tr>
<th>Experiment</th>
<th>Energy (AGeV)</th>
<th>Type</th>
<th>System</th>
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</thead>
<tbody>
<tr>
<td>NA49</td>
<td>40</td>
<td>C+C</td>
<td>Si + Si</td>
</tr>
<tr>
<td></td>
<td>158</td>
<td>C+C</td>
<td>Si + Si</td>
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<td>NA35</td>
<td>200</td>
<td></td>
<td>S+S</td>
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<tr>
<td>AGS</td>
<td>14.6</td>
<td></td>
<td>Si + Al/Si</td>
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<tr>
<td>JINR</td>
<td>4.5</td>
<td>'O+Ne'</td>
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</table>
WHAT IS NEEDED?

C+C AND Si+Si
AT 20, 30, 80 (10?) A GeV

+ p+p AT 10, 20, 30, 40, 80 GeV
WHO/WHERE/WHEN CAN DO IT?

- NA49, CERN, THIS + N YEAR(S)
- CBM, GSI+, IN ~ 10 YEARS?
- BRAHMS+PHOBOS, RHIC, NEXT YEARS??
- DUBNA-XXX, DUBNA COLLIDER, IN 40 YEARS???
A POSSIBLE NA49 STRATEGY

- A PROPOSAL FOR A NEW PROJECT
  - MAY 2003 (SPSC)

- Si-RUN THIS YEAR (2003)
  20 DAYS, 8 ENERGIES:
  10, 20, 30, 80 A GEV

- C-RUN, 2004, 20 DAYS, 4 ENERGIES
- P-RUN 2004, XXX DAYS, 5 ENERGIES

+ OTHER SPS EXPERIMENTS?
  (NA45, NA47, NA60)