INTRODUCTION TO MECHANICS

*) Four basic entities of classical physics:

Space (L), Time (T), Mass (M), Charge (Q).

{L} : Geometry

{L, T} : Kinematics

{L, T, M} : Dynamics

{L, T, M, Q} : Electrodynamics

But M distorts L → General Relativity!

*) SI (MKS) units of mechanics:

Fundamental: meter, kilogram, second

Derived: Hz ≡ \frac{1}{\text{sec}}, \quad \text{Watt} ≡ \frac{\text{kg} \cdot \text{m}^2}{\text{sec}^3}, \quad \text{etc.}

*) Branches of Physics according to Size & Speed:

<table>
<thead>
<tr>
<th>Fast</th>
<th>RCM</th>
<th>QFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow</td>
<td>CM</td>
<td>QM</td>
</tr>
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Large \quad Small