3D Time:
From Transportation to Physics
Part 8: 6D Spacetime

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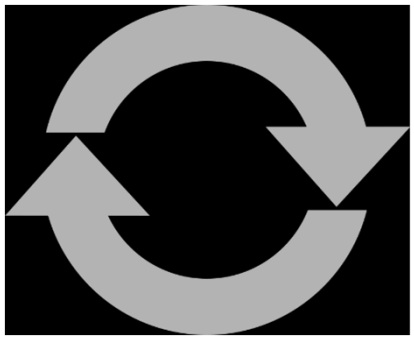
An opposite view

- Inverted ratios
  - space ↔ time
  - independent / dependent
  - pace, legerity, fulmentum
- Inverted quantities
  - vass = 1/mass
- Opposite directions
  - gravity vs. levity



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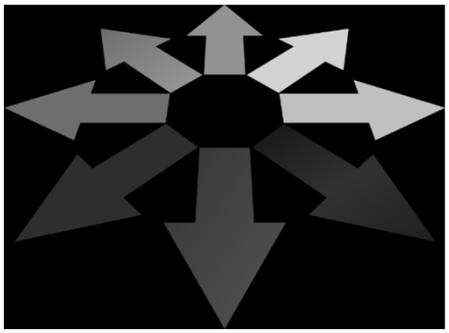
Series of videos

- Pictures and objections
- Kinematics
  - pace, legerity, expedience
- Dynamics
  - vass, fulmentum, rush
  - Newton's laws
- Orbits
  - levitation
- Relativity



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3D Space vs. 3D Time

- 3D space with scalar time
  - direction is spatial
- Space is relative
  - time is absolute, linear
- Events ordered by duration
  - timeline
- For observation
  - and signal reception
- 3D space + 1D time (3+1)

- 3D time with scalar space
  - direction is temporal
- Time is relative
  - space is absolute, linear
- Events ordered by distance
  - placeline
- For transportation
  - and signal transmission
- 1D space + 3D time (1+3)

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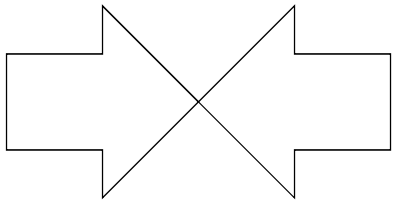
Space and time

- Qualitatively different?
  - Yes: Galileo & classical physics
  - No: Einstein & modern physics
- Science seeks unification
  - Minkowski: "union of the two"
  - 3D space + 1D time → 4D spacetime
- Combine space with 3D time
  - 3D space + 3D time → 6D spacetime



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6D Spacetime

- 6D geometry/manifold
  - points are events
- 4D spacetime
  - 3D space + 1D timeline (3+1)
- 4D timespace
  - 1D placeline + 3D time (1+3)
- Complex 3D spacetime?
  - complex numbers

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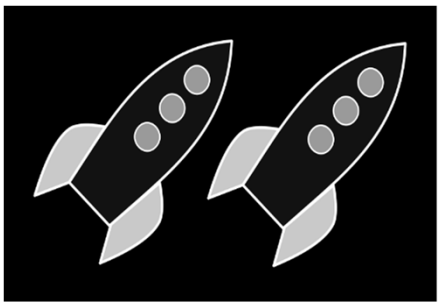
6D relativity

- Invariant interval
  - differences (Δ) or differentials (d)
- 4D invariant interval
  - $(\Delta s)^2 = (\Delta ct)^2 - (\Delta \mathbf{r})^2$
  - non-Euclidean spacetime
- 6D invariant interval
  - $(\Delta s)^2 = (\Delta c\mathbf{w})^2 - (\Delta \mathbf{r})^2$



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In conclusion

- 3D time
  - transportation
  - physics
- 3D time with space
  - 3D time + placeline
- 6D spacetime
  - 3D space + 3D time
- 3D time is *real*

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