

Summary: Mathematical Atomism (Unified Revolution: New Fundamental Physics) compared to Mainframe Physics. By Espen Gaarder Haug

Most of the book is about the first table, logic, mathematical derivations, and comparison with experiments.

| INDIVISIBLE RELATIVITY (IR) COMPARED TO SPECIAL RELATIVITY | Indivisible Relativity Measurements without synchronization error | Indivisible Relativity Measurements with Einstein synchronization (or slow clock transportation) | Einstein's Special relativity |
|---|--|---|--|
| Round-trip speed of light | Isotropic Very well tested | Only one clock is needed, so same as to left. | Isotropic |
| One-way speed of light | Anisotropic. Has been confirmed in several experiments, but ignored. | Isotropic Confirmed, but is an apparent speed that contains sync error. | Isotropic Confirmed, but is an apparent speed that contains sync error. |
| One-way speed of light independent on speed of source if measured relative to observer frame | Yes Given by IR velocity addition formula | Yes Same as SR velocity addition formula | Yes Follow well known SR velocity addition formula |
| One-way speed any object | True speed | Apparent speed and aware of it Contains sync error | Apparent speed and not aware of it Contains sync error |
| Round-trip time dilation | Isotropic, not reciprocal. Round-trip time dilation (the twin paradox) is a simple 3-frame problem consistent with SR, different interpretation IR. | No synchronization over distance is needed for round-trip so same as to left. | Isotropic, not reciprocal Defenders of SR use GR to explain twin paradox, result correct, unnecessarily complex solutions. (Logic?) |
| One-way time dilation | Anisotropic, not reciprocal (Possibly been indirectly detected according to some papers) | Isotropic and reciprocal Contains sync error | Isotropic and reciprocal Contains sync error |
| Synchronization error in clocks | No | Yes and aware of it. | Yes, but SR not aware of it |
| Length contraction | Not reciprocal | Reciprocal Contains sync error | Reciprocal Contains sync error |
| Maximum length contraction | Yes | | No (length goes towards zero) |

| | | | |
|---|--|---|--|
| Simultaneity | Absolute | Relativity of Simultaneity | Relativity of Simultaneity |
| | | Contains sync error | Contains sync error |
| Hierarchy of frames | Yes | No | No |
| Consistent with Sagnac and generalized Sagnac | Yes, simple logical explanation both from lab frame and rotating frame. | Yes, simple logical explanation both from lab frame and rotating frame. | Claims Yes. Logical explanation seems diffuse, in particular from rotating frame itself Sagnac himself claimed not consistent SR. |
| Hafele and Keating experiment: (See chapter 16 my book) | Yes and simple logical explanation why westward clocks was speeding up and eastwards clocked slowdown | No synchronization over distance is needed, same as in column to left. | Claims Yes, but unnecessarily complex solution to why westward clocks speed up and eastward slows down. |
| Relativistic Doppler shift | Same as SR, but consistent with anisotropic one ways speed of light, fits experiments | | Same as mathematical atomism, but assume isotropic one-way speed of light, fits experiments. |
| Finding light speed from observed frequency and "wave" length. | Yes gives speed c, but this is only an apparent light speed | | Yes gives speed c. This is only an apparent light speed. SR not aware of this. |
| Relativistic mass | Same formula as SR, but mass turns into energy before reaching speed c (typically at speeds very close to c) | | Mass becomes infinite as one approaches speed of light, needs infinite energy to accelerate to c |
| Conservation of energy | Yes and very good logical theoretical explanation. | | Yes, diffuse theoretical explanation, not very deep. |
| Explanation of what energy and mass truly is | Simple and logical explanation | | Diffuse at best: "It is important to realize that physics today we have no knowledge of what energy is" Feynman |
| Mass energy relationship | $E=Mc^2$ | $E=Mc^2$ | $E=Mc^2$ |
| Mathematical framework | Yes extensive mathematical framework given. | Yes extensive mathematical framework given. | Yes extensive mathematical framework given. |

| | | | |
|---------------------------------------|--|--|--|
| | All math has simple logical explanation. | All math has simple logical explanation. | Leads to several paradoxes with diffuse explanation. |
| Academic political correctness | No | No | Yes |

| COSMOLOGY | Atomism | Main frame theory |
|---|--|---|
| Age of universe | Infinite | Big Bang: 13 to 14 billion years old |
| Size of universe | Infinite | Empty space infinite, but all the mass and energy moves out from the Big Bang |
| Cosmological red-shift | Explained by tired light theory. Tired light theories should be re-considered, in particular based on new insight in relativity theory based on atomism. | Explained by Big Bang theory, and such things as space is expanding. |
| Dark matter | Very unlikely. | Yes necessary to make a flawed model fit observations. |
| Faster than speed of light galaxies | Not possible and not needed, high Z cosmological red-shift explained by "tired light" | Yes must assume many galaxies moves faster than speed of light, explained by introducing expanding space. |
| Expanding space | Space cannot expand. | Expanding space is needed to explain cosmological red-shift where one to early abandoned tired light explanation. |
| Observations of large numbers of quasars show no (additional) time dilation for high Z as one should expect based on Big Bang theory | Consistent with tired light and atomism. | Needs strange explanation like high Z quasars are expanding black holes, or even that time ticks at different rates due to space expansion. |
| High Z supernova observation time dilation seems to be based on very few observations compared to quasar studies. | Not inconsistent with atomism. | Used (abused) as ultimate evidence for Big Bang and accelerating space expansion despite quasar studies contradicting this. |
| Singularity where math and logic breaks down | No | Yes |
| Wormholes | Cannot exist | Can possibly exist |
| Black holes | Extremely high gravity can exist, but such "black-holes" will always radiate energy and are therefore not really black holes. | Extremely high gravity can exist, but such "black-holes" will likely radiate energy |

| | | |
|---|---|---|
| Gravity | Gravity is explained by push gravity theory (push force and shielding), this leads indirectly to changes in space-time. The math is far from fully developed around atomist push gravity. Newton gravitation has already been derived from atomism as good first approximation. | Gravity is explained by bending of space-time. Has “fully” developed mathematical theory (GR) (Some magical gravitational waves are bending space-time?) |
| Quantization of gravity | Yes and consistent with push gravity | Unclear |
| One-way speed of gravity | Anisotropic if measured with clocks without Einstein synchronization error, isotropic and c if measured with Einstein synchronized clocks. | Isotropic and c Contains sync error |
| Mega large planets can over time become suns | Likely | No (unlikely) |
| Growing planets | Likely | No (unlikely) |
| Exploding suns | Yes, but different explanation than main frame | Yes |
| Other intelligent life-forms in universe | For sure | High probability, but not for sure |
| Origin of life and intelligence | Memory: indivisible particles fulfill the requirement of memory blocks: they can receive, store and transfer information. In general consistent with Darwinism at chemical atom level and upwards. | Very good surface science (series of theories), but not directly linked to sub-atomic world. Darwinism Chemical origin of life |

| OTHER TOPICS | Atomism | Main frame physics |
|--|---|--|
| Fundamental sub-atomic particle | Is indivisible and has spatial dimension | Point-like without spatial dimension |
| Indivisible particle with spatial dimension | One of corner stones in the two postulates. | Would need infinite strong force to have indivisible particle with spatial dimension, so “cannot” exist. |

| | | |
|---|---|---|
| Light (pure energy) is | Indivisible particles with spatial dimension traveling in same direction. Particle-void “duality” with logical explanation. | Mystical particle-wave duality. |
| Quantization of energy | Yes and simple theoretical explanation of why. | Yes |
| Mass is | Indivisible particles with spatial dimension moving back and forth counter-striking. Particle-void “duality” with logical explanation. | Mystical particle-wave duality, several fundamental particles with “mystical” forces. |
| Quantization of mass | Yes and simple theoretical explanation of why. | Yes (?) |
| de Broglie wavelength for matter | Yes get same equation but different interpretation, it is not really a wavelength | Yes |
| Maximum frequency of light | Yes | Yes and No (diffuse) |
| Kinetic energy | Same formula as mainframe physics. | Same formula as atomism. |
| Number of forces | One force (counter-striking ability), can explain gravity, conservation of energy, relationship between energy and matter etc. Must the force be with you! ☺ | Series of different forces needed. Can explain most experiments, or is this adding of assumptions and mystical effects to explain things we truly do not understand from a simple perspective? |

Bear in mind this is just a very short summary of the major differences (implications) given in my book: **Unified Revolution: New Fundamental Physics**. Comments/suggestions are welcome!

9 February 2015 (Last modified 31 May 2015)