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transformations; 3-7. Experimental tests of the Wu transformations;
References

4. Coordinate Transformations for Frames with Arbitrary Linear Accelerations and the Taiji Pseudo-Group
4-1. Arbitrary Linear Accelerations: The Taiji Transformations; 4-2. Poincare Metric Tensors for Arbitrary-Linear-Acceleration Frames; 4-3. New Properties of the Taiji Transformations; 4-4. Physical Implications; 4-5. Experimental Tests of the Taiji Transformations; References;

5. Coordinate Transformations for Rotating Frames and Experimental Tests; 5-1. Rotational taiji transformations; 5-2. Metric tensors for the space-time of rotating frames; 5-3. The rotational pseudo-group

5-4. Physical implications; 5-5. Experimental tests of the rotational taiji transformations; References;

6. Conservation Laws and Symmetric Energy-Momentum Tensors; 6-1. Conservation laws in the Taiji symmetry framework; 6-2. Symmetric energy-momentum tensors and variations of metric tensors in taiji space-time; 6-3. Integral forms of conservation laws in non-inertial frames; 6-4. Symmetry implications of global and local space-time translations; References;

Part II. Quantum Yang-Mills Gravity
Jong-Ping Hsu and Leonardo Hsu

7. The Yang-Mills-Utiyama-Weyl Framework for Internal and External Gauge Symmetries
7-1. The Yang-Mills-Utiyama-Weyl framework; 7-2. The Levi-Civita connection and interpretations of Einstein gravity; 7-3. Weyl's parallel transport of scale and electromagnetic fields; 7-4.

Curvatures on the connections; 7-5. Taiji symmetry and the space-time translational symmetry group T_4 ; References;

8. Yang-Mills Gravity Based on Flat Space-time and Effective Curved Space-Time for Motions of Classical Objects; 8-1. Translational gauge transformations in taiji space-time

8-2. Translational gauge symmetry and the field-theoretic origin of effective metric tensors

Sommario/riassunto

Yang-Mills gravity is a new theory, consistent with experiments, that brings gravity back to the arena of gauge field theory and quantum mechanics in flat space-time. It provides solutions to long-standing difficulties in physics, such as the incompatibility between Einstein's principle of general coordinate invariance and modern schemes for a quantum mechanical description of nature, and Noether's 'Theorem II' which showed that the principle of general coordinate invariance in general relativity leads to the failure of the law of conservation of energy. Yang-Mills gravity in flat space-time a
