

Abstract Submitted
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Connecting vectors and relativistic strains DONATO BINI, ANDREA GERALICO, Istituto per le Applicazioni del Calcolo “M. Picone”, CNR, and ICRA — The definition of relative accelerations and strains among a set of co-moving particles is studied in connection with the geometric properties of the frame adapted to a “fiducial observer.” A relativistically complete and correct definition of strains is given taking into account the transport law of the chosen spatial triad along the observer’s congruence. The celebrated idea of Szekeres’ compass of inertia is then generalized, contributing also to the theory of relativistic gravity gradiometer. The observer-dependent form of our analysis might be very useful when thinking about general relativistic tests on space stations orbiting compact objects like black holes and also in other interesting gravitational situations.

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