

## SPIN FLUIDS IN HOMOGENEOUS AND ISOTROPIC SPACE-TIMES

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### S u m m a r y

We consider a Weysenhoff fluid assuming that the space-time is homogeneous and isotropic, therefore being relevant for cosmological considerations of gravity theories with torsion. It is explicitly shown that the Weysenhoff fluids obeying the Frenkel condition or the Papapetrou–Corinaldesi condition are incompatible with the cosmological principle which restricts the torsion tensor to have only the vector and axial vector components. Moreover, it turns out that the Weysenhoff fluid obeying the Tulczyjew condition is also incompatible with the cosmological principle. This condition has not been analyzed so far in this context. Based on this result, we propose to reconsider a number of previous works that analyzed cosmological solutions of the Einstein–Cartan theory, since their spin fluids did not obey usually the cosmological principle.