

Spinning-particle motion is studied, within the pole-dipole approximation, in algebraically special space-times of type N, III and D. The spin-curvature interaction is analysed for the Pirani and Tulczyjew spin supplementary conditions; for N and D types, the condition is related to a relative acceleration of two near observers separated in the direction of particle's spin. For Tulczyjew's condition, the momentum-velocity relation is also studied as well as its consequences for the spin-curvature interaction. Finally, the type of motion is mentioned for which both the supplementary conditions considered are equivalent.