In this article, the authors try to clarify some subtleties in recently developed "new twistor string theories" by Abou-Zeid, Hull and Mason (AHM) [1]. New twistor string theories arise from an attempt to eliminate conformal symmetries from the construction of gravitational theories in twistor string theory. These new theories are motivated partly by the hope of deriving Einstein gravity within a twistor-string framework. Nair has however pointed out that computation of a three-point graviton correlator in the new theories leads to a chiral $\mathcal{N} = 8$ supergravity rather than Einstein supergravity [2]. In this article, equations of motion (and gauge invariance) for a particular multiplet in the new theories are further examined and it is suggested that the theories in fact contain some algebraic restrictions, clarifying an apparent contradiction between AHM's original proposal and Nair's observation. The article also discusses that a *three-point* correlator in Berkovis' open twistor string theory agrees with the corresponding result in Einstein gravity.

References

[1] M. Abou-Zeid, C. M. Hull and L. J. Mason, Commun. Math. Phys. **282**, 519 (2008) [arXiv:hep-th/0606272].

[2] V. P. Nair, Phys. Rev. D **78**, 041501 (2008) [arXiv:0710.4961 [hep-th]].