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Searching for a Carter-like constant of motion in the Bach-Weyl solution[1] SAEED MIRSHEKARI, CLIFFORD WILL, Washington University, St. Louis — It was recently shown [1] that the Newtonian gravitational field of two fixed point masses has multipole moments linked by the same relation as those for Kerr black holes, and that there is a Carter-like constant of the motion for this system. In this work, we study whether the general relativistic analogue, the Bach-Weyl solution, also has a Carter-like constant. We carry this out by (1) searching for a symmetric Killing tensor for the Bach-Weyl spacetime, and (2) trying to construct a Carter-like constant in its post-Newtonian limit. Preliminary results will be reported.

[1] C. M. Will, Phys. Rev. Lett. 102, 061101 (2009)

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