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## Memory effect of gravitational wave pulses in pp-wave spacetimes

A gravitational wave pulse, while passing through spacetime, brings about a change in the relative separation between free particles. This 'memory effect' serves as one of its signatures of GW. In this paper, we choose some viable pulse profiles which are yet to be analyzed by earlier workers (e.g.  $u^{-4}$ ,  $u^{-2}$ ,  $c/(u^2 + au + b)^2$ ), and examine the memory effect produced by these pulses in pp-wave spacetimes. For our work, we choose the pp-wave spacetime in Brinkmann coordinate to study the geodesic equations. We observe increasing displacement memory effect in all the cases along all directions and the velocity memory effect either continues to increase or reaches saturation after an initial increase.

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