

In this work we will examine an on-shell action, its basic properties and its relation to transition amplitude. Derivatives of on-shell action with respect to position and time are equal to momentum and energy. On-shell action of a system is sufficient for determining the trajectory describing time evolution of the system. On-shell action can be computed as (off-shell) action of specific physical trajectory connecting initial position in initial time with final position in final time but it can also be found from solutions to two Hamilton-Jacobi equations, one in initial time and position variables and the other in final time and position variables. In quantum mechanics a transition amplitude is directly proportional to the complex exponential of the on-shell action. Work with on-shell action is demonstrated on examples such as free particle, harmonic oscillator and partly also on central force problem.