

In the present work we investigate the solution of the univalent twistor equation on an isolated horizon that serves for the definition of the so-called Penrose mass. We start our discussion with the construction of adapted coordinates to the isolated horizon and summarizing the main results in this field that are needed for our work. We include a chapter devoted to the extremal isolated horizons and prove an important result concerning uniqueness of geometry therein. It is a generalization of the paper by Lewandowski and Pawłowski (*Class. Quantum Grav.* **31** (17), 2014), which states that the extremal isolated horizons are necessarily isometric to the intrinsic geometry of the Kerr-Newmann black hole. Further we proceed to investigation of the twistor equation on the isolated horizon. We analyze conditions of integrability and derive the time dependent solution. Consequently we solve the 2-surface twistor equation and briefly discuss the general approach to the problem of defining the Penrose charge.