

1154-53-886

Ryad Ghanam* (raghanam@vcu.edu), Doha, Qatar, and **Gerard Thompson**
(gerard.thompson@utoledo.edu), Toledo, OH. *Symmetries of the Eikonal Equation.*

We consider the n -dimensional Eikonal equation on a flat metric. We prove that the infinitesimal algebra of Lie symmetries of the Eikonal equation is $\mathfrak{o}(n + 1, 2)$ when there are n independent variables. We also give an explicit basis that is aligned with the standard basis coming from the standard matrix representation of $\mathfrak{o}(n + 1, 2)$ thereby making it possible to read off inequivalent one dimensional symmetry vector fields. The symmetries are used to construct various solutions of the Eikonal equation. (Received September 11, 2019)