International Journal of Applied Mathematics
& Statistical Sciences (IJAMSS)
ISSN(P): 2319-3972; ISSN(E): 2319-3980
Vol. 5, Issue 5, Aug - Sep 2016; 53-64

International Academy of Science,
Engineering and Technology
Connecting Researchers; Nurturing Innovations

NEW SOLUTIONS OF ANGULAR TEUKOLSKY EQUATION VIA TRANSFORMATION TO HEUNS EQUATION WITH THE APPLICATION OF RATIONAL POLYNOMIAL OF AT MOST DEGREE 2 TOGETHER WITH AN INTEGRAL OPERATOR

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ABSTRACT

The perturbation equation of masseless fields for Kerr-de Sitter geometry are written in form of seperable equations as in [19] called the Angular Teukolsky equation. The Angular Teukolsky equation is converted to General Heun's equation with singularities coinciding through some confluent process of one of five singularities. As in [17] and [18] rational polynomials of at most degree two are introduced.

AMS Subject classification: 33XX.

KEYWORDS: Heun Equation, Teukolsky Equation, Type-D Metrics, Polynomial Solutions