EXISTENCE OF MASSLESS AND NON-EXISTENCE OF MASSIVE SCALAR WAVES WITH GRAVITATIONAL WAVES FOR GENERALIZED PERES SPACE-TIME

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Abstract. This paper deals with the existence of massless scalar field with plane gravitational waves, plane gravitational waves coupled with electromagnetic waves and non-existence of massive scalar field with plane gravitational waves, plane gravitational waves coupled with electromagnetic waves for generalized Peres space-time.

AMS Classification and PACS 2006: 74H99, 95.30 SF, 98.80JK

Keywords: Plane gravitational waves, Electromagnetic waves, Massless and massive scalar fields.

1. Introduction

Takeno [8] has rigorously studied plane gravitational waves mathematically and shown the co-existence of gravitational waves with electromagnetic waves. Pawar