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UNSTEADY FLOW OF BLOOD THROUGH A STENOSED ARTERY UNDER THE INFLUENCE OF TRANSVERSE MAGNETIC FIELD

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Abstract: The purpose of this work unsteady flow of blood through a stenosed artery under the influence of transverse magnetic field is studied analytically. The laminar, incompressible, fully developed, Newtonian flow of blood in an artery having mild stenosis and governing equations are solved analytically by using Bessel function. It is assumed that the surface roughness is cosine-shaped and the maximum height of the roughness is very small compared with the radius of the un constricted tube.

Keywords and Phrases: Slip Velocity, Transverse Magnetic field, Oscillatory flow, Hartmann number.

2010 Mathematics Subject Classification: 58D30.

1. Introduction

The study of blood flow through arteries are of considerable importance in many cardiovascular diseases particularly atherosclerosis. The normal blood flow is disturbed due to the formation of some constriction in the inner wall of the artery,