REVIEW OF BLOOD VESSELS VELOCITY ESTIMATIONS

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Rezumat. *Bolile vasculare se reflectă prin tulburări ale curgelui sângelui cât și modificări morfologice. Imagistica medicală digitală a revoluționat elaborarea diagnosticul și tratamentul acestor boli. Extragerea maximului de informație despre fluxul sanguin din achizițiile medicale imagistice are o mare importanță pentru medicii din zilele noastre. Lucrarea prezintă o trecere în revistă a celor mai semnificative metode de extragere a vitezei sângelui din imaginile medicale. Angiografia cu raze X este standardul în diagnosticarea bolilor vasculare și poate fi utilizată cu succes împreună cu metodele de estimare a vitezei sângelui prezentate în această lucrare.*

Abstract. The vascular diseases are reflected by impairments in both morphology and hemodynamics. Digital medical imaging has revolutionized the diagnosis and treatment of these diseases. The extraction of the blood flow information from the daily clinical medical imaging acquisitions is one of the greatest importance for the physicians nowadays. The paper presents a review of the most noticeable methods of extracting blood velocity from medical images. X-ray angiography is the gold standard of the vascular diseases' diagnosis, and it can be used successfully along with blood velocity estimation methods presented in this paper.

Keywords: angiography, transit time, blood vessel
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1. Introduction

The cardiovascular diseases are the leading cause of death worldwide, followed by cancer as stated by World Health Organization. Medical imaging is intensively used in the diagnostics of vascular diseases in the past tens of years. The gold standard for the diagnosis of the coronary artery diseases remains the X-ray angiography.

The main goal is the extraction of the maximum knowledge from a medical images. There are efforts in extracting the velocity from fluoroscopic angiography which offers important information about the propagation of the contrast agent into blood stream.

2. Blood Velocity Methods

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