Introduction

Coronary artery disease is a major health problem, both in developed as well as in developing countries. A noninvasive method that would allow the evaluation of coronary stenoses with a comparable accuracy to catheter based angiography would have enormous clinical value.

Non invasive imaging of the coronary arteries is faced with great difficulties. Most obviously, coronary vessels have small dimensions, which require high spatial resolution. Also, they are subjected to rapid motion because of cardiac contraction so sufficient temporal resolution is thus necessary to avoid artifacts **(1)**.

Magnetic resonance imaging is one possible approach. Yet, in spite of the rapidly evolving technologies, the spatial resolution of MRI still posses' difficulties to properly visualize the coronary arteries **(2)**.

Computed tomography (CT) imaging represents an alternative approach to noninvasive coronary imaging; however, conventional CT has a low temporal resolution because a heavy X-ray tube needs to rotate around the patient **(1)**.

To improve the temporal resolution of conventional CT; increasing gantry rotation speed of conventional CT scanners and implementing software algorithms to reconstruct images using only parts of one rotation represents a useful approach.

Additionally, the development of detectors that permit acquisition of several parallel, thin slices simultaneously provides

increased spatial resolution hence, the assumed usefulness of multi-slice CT in noninvasive assessment of coronary arteries **(1)**.

There are several suggested prospects for cardiac multi-slice CT (MSCT). Coronary stenosis assessment **(3)**, detection and evaluation of coronary atherosclerotic plaques **(4)** and Visualization of coronary artery bypass grafts **(5)**.

There are several reasons hindering adequate Visualization of coronary arteries via CT: A high heart rate (temporal resolution) and presence of coronary calcification (spatial resolution) were identified as the major contributors to impaired image quality **(3)**.

Several newer generation CT scanners are now available with increasingly more detector rows and higher gantry speeds, allowing for better visualization of the coronary arteries.