Extraction of Three Dimensional 3D from 'URBAN' from High Resolution Interferometric SAR Images

Hadj sahraoui Omar

Division de Télédétection

Centre National des Techniques Spatiales, 1 Rue de la Palestine, B.P.13 Arzew 31 200 Oran Algérie

Tel. : 00 213 71 59 74 16 – Fax :00 213 41 47 36 65

Hadjsahraouio@CNTS.dz / Sahraoui.omar1@caramail.com

Iften Tahar

Division de Télédétection

Centre National des Techniques Spatiales, 1 Rue de la Palestine, B.P.13 Arzew 31 200 Oran Algérie

Tel. : 00 213 71 59 74 16 – Fax :00 213 41 47 36 65

mailto:Iftentii@cnts.dz

Hassaine Benali

Division de Télédétection

Centre National des Techniques Spatiales, 1 Rue de la Palestine, B.P.13 Arzew 31 200 Oran Algérie

Tel. : 00 213 41 47 22 17 – Fax :00 213 41 47 36 65

mailto:hassaineb@CNTS.dz / hass_ben2001@yahoo.fr

Abstract

This article presents a method for digital elevation model extraction from high resolution interferometric SAR images over urban areas. Our algorithm, based on the use of a unique SAR interferometric couple, processes each building separately in order to retrieve the best enclosing polygonal shape, the layover area and the ground/wall dihedral structures. The ground level is extracted in parallel. In this paper, we focus on building height extraction. The specific steps are described in this paper and illustrated by examples on real data.