3D Cloud and Storm Reconstruction
from Satellite Image

H. G. Bock[1], **S. Chuai-Aree**[2], **W. Jäger**[3],
W. Kanbua[4], **S. Krömker**[5], **and S. Siripant**[6]

Abstract: The satellite images in Asia are produced every hour by Kochi University, Japan (URL http://weather.is.kochi-u.ac.jp/SE/00Latest.jpg). They show the development of cloud or storm movement. The sequence of satellite images can be combined to show animation easily but perspective angle view can be shown only from the top-view. In this paper, we propose the method to reconstruct the 2D satellite images to be viewed from any perspective angle view. The cloud or storm regions are analyzed, segmented and reconstructed to 3D cloud or storm based on the gray intensity of cloud properties. The result from reconstruction can be used for warning system in the risky area. The typhoon Damrey (September 25 - 27, 2005) and typhoon Kaitak (October 29 - November 1, 2005) will be shown as a case study of this paper. The other satellite images can be reconstructed by using this approach as well.

[1,2,3,5] Interdisciplinary Center for Scientific Computing (IWR), University of Heidelberg
Im Neuenheimer Feld 368, 69120 Heidelberg, Germany
Somporn.ChuaiAree@iwr.uni-heidelberg.de, wjaeger@iwr.uni-heidelberg.de,
bock@iwr.uni-heidelberg.de

[4] Thai Meteorological Department,
4353 Sukhumvit Road, Bangna, Bangkok 10260, Thailand
watt_kan@hotmail.com

[6] Advanced Virtual and Intelligent Computing (AVIC), Chulalongkorn University
Phayathai, Bangkok 10330, Thailand
ssuchada@chula.ac.th