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Chapter 1

Change detection in remote sensing observation

The aim of this chapter is to draw an overview of change detection techniques in remote sensing earth observation. In remote sensing application, a change may be considered to as an alteration of the surface components. But temporal analysis of remote sensing image is facing several difficulties, among them the large amount of data to be processed and also the very few number of temporal observations. Despite the lack of temporal model, the natural evolution of landscape and the evolution induced by the sensors, many valuable techniques exist that perform change detection from two or more images acquired from the same or from different sensors.

This overview has been drawn from the CACHANT initiative supported by the GdR ISIS in 2006 and the presentation that have been given during the two meetings¹.

Chapter written by G. Mercier, S. Derrode, E. Trouvé, with the collaboration of CACHANT meeting authors.

1. CACHANT: *Cartographie Automatique des Changements Naturels par Télédétection* <http://gdr-isis.org/cachant>.