



UNIVERSITÀ DI PAVIA

Corso di Dottorato in Scienze della Terra e dell'Ambiente

1. Project title

A-DInSAR technique as supporting tool for sustainable groundwater resources management in subsiding area

2. Proposer

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4. Key words

(Max. 5 – at least 2)

Groundwater management, Subsidence, A-DInSAR, Earth Observation techniques

5. Abstract

(Max.1.500 characters with spaces)

In the forthcoming years, the urban and agricultural **water demand will increase** as consequence of the expected global **urban growth**, especially for the Asian megacities. Furthermore, **climate change** will affect the timing and the distribution of water supply. An effective management of groundwater resources is necessary **to avoid groundwater over-exploitation and the subsequent land subsidence risk**. To



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develop robust groundwater flow and soil deformation models, **the characterisation of the aquifer properties is of paramount importance.**

The aim of the PhD project is to **develop an innovative methodology for the hydrogeological characterisation of large-scale aquifer systems, for the numerical groundwater flow and geomechanical modelling process using** low-cost and non-intrusive data such as satellite-based Earth Observation (EO) techniques (**A-DInSAR**).

The developed methodology will be applied in two representative pilot sites such as the Comacchio Valley in Italy and an Asian test site which might be a city among Hanoi (Vietnam) or Bandung (Indonesia).