## ABSTRACT PER IL RIASSUNTO DELLA TESI DI DOTTORATO

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Natural environments are extremely complex systems, characterized by such a number of variables to be not exactly reproducible with physical models. In order to study them, experiments have to be conduct directly in field with measurements spread over both time and space, thus providing data also useful for formal models and simulations. Observations involve extensive and repeated campaigns, which are generally very demanding in terms of means and resources. Only large data collections can supply the representative samples of the environmental system behaviour, which are essential for scientific advancement. At present, a important contributions in this direction are supported by distance sensors and automatic equipment, which are able to produce large quantities of data, recording synoptic information for wide regions.

Tidal zone are remarkably variable environmental systems in their hydraulic, sedimentary and biological aspects. In this context, the Venice Lagoon constitutes a very particular case: it is an area strongly influenced by human activities, hence its condition is certainly far from the natural one, nevertheless it presents an inestimable environmental value. For this reason several scientific studies and researches have taken care of it since centuries, producing a wide documentation. Moreover, the human interest in preserving such a vulnerable transitional environment induced the installation of an extensive net of monitoring stations for environmental parameters, with particular attention to the atmospheric ones and to the sea level measurements.

All these data, picked up in different time and contexts and for different reasons, together with their perspective metadata, represent so a precious patrimony documenting the dynamics of such system and its response to anthropic pressures and climatic variability. Therefore it shall be a priority to collect and archive all of this information (that can't be acquired another time!) and constitute free accessible archives to favour research improvement.

Nowadays, informatics provides very powerful storing capacity and the data transmission web supplies efficient tools for dissemination. Indeed electronic archives can guarantee wide spacesaving and also allow fast and diverse access to data.

The *Istituto Veneto di Scienze, Lettere ed Arti* is institutionally committed also for safeguarding and disseminating scientific knowledge. In order to carry out this task, two environmental databaes are being developed into a dedicated Internet *site* (<a href="http://www.istitutoveneto.it">http://www.istitutoveneto.it</a>). One of these, called «Banca Dati Ambientale sulla Laguna di Venezia», concerns the Venice's area and contains scientific information relating to the local territory: it has the aim to improve data circulation for researching, administrative and educational purposes; the other constitute the supporting Internet *site* of the «TIDE RTD Project»: an European research project dedicated to the study of coastal wetland environmental dynamics in different tidal zones, such as the Venice Lagoon (Italy), the Morecambe Bay (England) and the Eden Estuary (Scotland). The TIDE Web *site* performs three functions, that are: (1) to guarantee transparency on the development of the research activities; (2) to provide quick and efficient communication and data exchange among the Partners (password reserved); (3) to realize a database collecting all data, metadata, models and ancillary information derived and elaborated inside the Project itself, that will be freely available after the Project conclusion.

The *Istituto Veneto di Scienze, Lettere ed Arti* has thus associated its traditional experience and competence with modern technologies for the efficient spreading of scientific knowledge on coastal wetlands, giving particular attention to the Venice Lagoon territory, in order to favour research improvement, and also public and decision makers awareness.