

El próximo **3 de Julio de 2020** tendrá lugar la defensa de la Tesis Doctoral

HYDROGEOLOGY OF SALT FLATS: THE SALAR DE ATACAMA EXAMPLE

AUTOR:

Miguel Ángel Marazuela Calvo

Universitat Politècnica de Catalunya (UPC)
Institut de Diagnosi Ambiental i Estudis de l'Aigua (IDAEA) del Consejo
Superior de Investigaciones Científicas CSIC

Directores:

Dr. Enric Vázquez Suñé (IDAEA-CSIC)

Dr. Sebastià Olivella Pastalle (UPC)

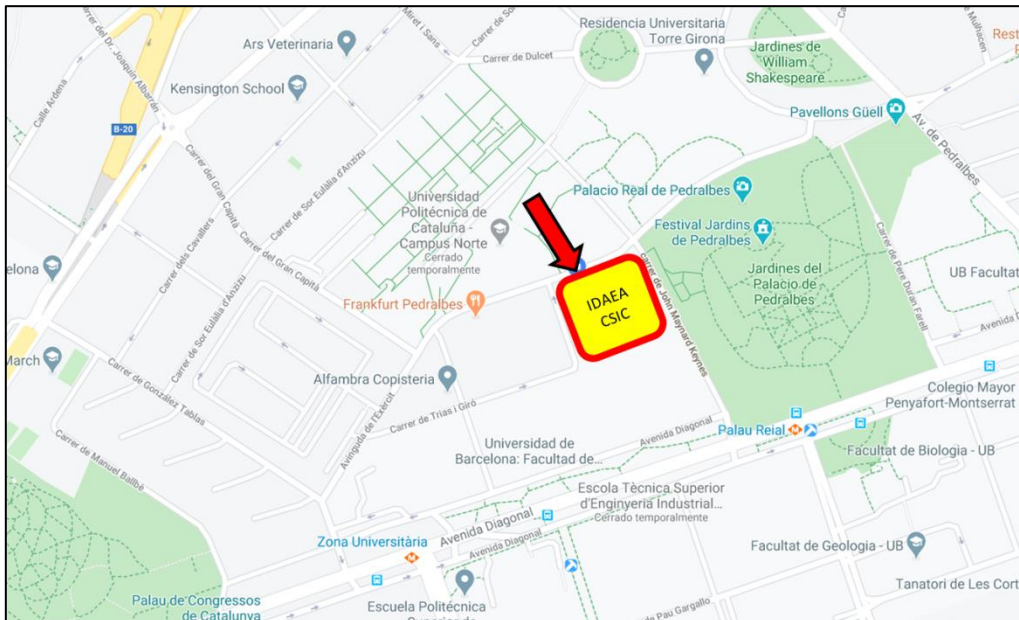
Horario:

Viernes, 3 de julio de 2020, hora: 13:00 pm

Lugar:

Salón de Actos del IDAEA-CSIC

C/ Jordi Girona, 18, 08034, Barcelona



La defensa de la Tesis también podrá seguirse a través del siguiente link(*):

<https://conecta.csic.es/b/mig-xkh-ckx>

(*) Estar atentos a posibles cambios de última hora que se informarán debidamente.

ABSTRACT

This dissertation aims to advance the knowledge of the hydrogeological functioning of salt flats in order to achieve a sustainable management of their mineral resources and ecosystems. Salt flats are saline endorheic systems associated to arid and hyperarid climates where the water table is located a few centimeters below the ground due to the strong evaporation. Salt flats are a major source of Li, B, I, K, Mg and NaCl, and they host some of the most outstanding ecosystems on earth. Approximately 25 % of the global Li reserves are located in the Salar de Atacama (Northeast of Chile). The exploitation of this raw material, highly valued in the technological and pharmaceutical industries, is carried out by brine pumping. This extraction can affect the natural hydrogeological regime of salt flats and, in many cases; the possible impact on their ecosystems is unknown. The scientific knowledge of its complex hydrogeological functioning is basic to support a sustainable management.

This thesis contributes to (1) explain the geometry and the groundwater flow of the saline interface located around salt flats, (2) define the hydrodynamics and the water balance of the Salar de Atacama under natural conditions, (3) analyse and quantify the impacts caused by brine exploitation, (4) improve the design of brine exploitations in salt flats and (5) question the traditional ideas on the genesis of the Li enrichment in the Salar de Atacama.