**El Programa de Magister en Ciencias de Ingeniería del Departamento de Ingeniería Civil invita a la charla titulada:**

# From hyporheic processes, controlling redox conditions in the hyporheic zone, to monitoring streambed surface elevation changes

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**Abstract**

The hyporheic zone is a saturated band of sediment that surrounds river flow and forms a linkage between the river and the aquifer. It is a rich ecotone where benthic, hyporheic, and groundwater species temporarily or permanently reside. The interaction between the stream and its surrounding saturated streambed sediment has a profound impact on fluvial ecosystems. Bed forms cause near bed pressure gradients that induce a complex flow pattern within the streambed sediment. This process, known as hyporheic exchange, is important for delivering nutrients, oxygen and other solutes to the sediment, and for washing away waste products to support this ecotone. Here, we first present a simple mathematical framework for examining the mechanics of hyporheic exchange. Then, we apply the model to predict the role of hyporheic flow in the emissions of nitrous oxide, a potent greenhouse gas from riverine systems. Finally, we show a new field method to monitoring hyporheic fluxes, thermal properties of the streambed material and changes in streambed surface elevations from pair temperature time series of stream water and hyporheic water.

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**Lugar: Auditorio 105, en el Hall de la Facultad de Ingeniería.**

El Prof. Tonina ha realizado importantes aportes al conocimiento acerca de la hidrodinámica de flujos hiporréicos y su interacción con el transporte de sedimentos y calidad de agua, en revistas como *Water Resources Research, Journal of Contaminant Hydrology, Advances in Water Resources y Journal of Hydrological Processes.* Asiste!