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## Sulfamethoxazole mobility and risk of contamination of water resources at the catchment scale (Katari - Titicaca Lake, Bolivia)

Denisse Archundia Peralta<sup>1,2,3</sup>, **Céline Duwig**<sup>3</sup>, Lorenzo Spadini<sup>3</sup>, Marie-Christine Morel<sup>3,4</sup>, Blanca Prado<sup>1</sup>, Vladimir Orsac<sup>5</sup>, and Jean M.F. Martins<sup>3</sup>

<sup>1</sup>Instituto de Geología, Universidad Nacional Autónoma de México, Coyoacán, Ciudad de México, México (denisearchundia@yahoo.com.mx)

<sup>2</sup>Consejo Nacional de Ciencia y Tecnología (CONACYT), México, D.F.

<sup>3</sup>Univ. Grenoble Alpes, IRD, CNRS, IGE (UMR5001), Grenoble, France

<sup>4</sup>CNAM, Laboratoire d'analyses chimiques et bioanalyses, Paris Cedex 3, France

<sup>5</sup>Universidad Mayor de San Andrés, Facultad de Agronomía, La Paz, Bolivia

Sulfamethoxazole (SMX) is one of the antibiotics most commonly detected in aquatic and terrestrial environments and is still widely used, especially in low income countries. The Katari watershed encompassing the biggest city in the Altiplano and having its outlet in the Titicaca lake was studied: ten soils having contrasting properties were collected throughout the watershed. SMX displacement experiments were carried out in repacked soil columns to explore SMX reactive transfer and to assess the contamination risk of water resources in the Bolivian Altiplano. Relevant sorption processes were identified by inverse modelling of experimental breakthrough curves. Different processes were identified depending on the soil type: irreversible sorption, instantaneous and rate-limited reversible sorption. SMX mobility was lower in soils located upstream of the watershed (organic and acidic soils - Regosol) and was related with a higher adsorption capacity compared to the soils located downstream (lower organic carbon content - Cambisol). SMX was classified as a moderately to highly mobile compound in the studied watershed, linked to soil properties such as pH, OC and soil texture. Sulfamethoxazole can potentially threaten the quality of surface and groundwater pollution in the lower part of the studied catchment, threatening Lake Titicaca water quality.