



Departamento de
Matemática Aplicada

Seminario



Instituto de
Matemática
Interdisciplinar

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Mathematical models for degradation of clay constructions: application to Por-Bajin fortress walls

Historical introduction: The archaeological site of Por-Bajin is situated on an island in Tere-Khol lake (Russian Federation, the Republic of Tuva, 50 km from Russian-Mongolian frontier). Most part of the constructions of the site, including fortress walls, are made of clay. The place is difficult of access and sparsely populated; this caused quite a good conservation of the clay constructions of the site in general and their decay is due to natural factors only.

Thorough interdisciplinary study of the monument started in 2007. One of the problems was to estimate the initial height of the clay constructions. This required (i) complete analysis of all the destruction factors for clay buildings in the given zone and (ii) some quantitative description of the destruction process.

In the talk a survey of suitable mathematical models for the decay of clay construction is given. An analysis of the destructing factors based on the results of fieldwork 2008 is presented. Mathematical models which fit the fieldwork data are discussed.

Organizado por el Departamento de Matemática Aplicada y el Instituto de Matemática Interdisciplinar con la colaboración del grupo de investigación Modelos Matemáticos en las Ciencias de la Naturaleza.

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