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RECREATION AND SIMULATION OF PREINDUSTRIAL FLOUR PROCESSES IN THE MARGIN OF RIVERS

J. J. Fernández¹, J. I. José¹, J. Martínez-Rubio¹, and J. Finat²

¹Laboratory of Architectural Photogrammetry (LFA), ETS Arquitectura, Universidad de Valladolid, Avda Salamanca s/n, 47014, Valladolid, Spain

²Modelado, Biomecánica y Visualización Avanzada del Patrimonio (MoBiVAP), Parque Científico de la Universidad de Valladolid, Paseo de Belén 11, 47010, Valladolid, Spain

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Abstract. Manufacture and preindustrial activities have configured infrastructures and commercial development along several centuries. Both regional economic and social environment of the present days can be seen as a consequence of the secular interaction between available physical resources and social tissue along our history. Since ancient times, the economy of Castile and Leon has been based on livestock and agriculture, predominantly represented by cattle and large cereal extensions. Thus, flour industry plays an important role which has been reflected along the Medieval and Renaissance ages in a network of preindustrial installations involving mills and "aceñas" (which are also water-powered mills but set up as larger plants containing different kinds of grinders). In this work we have performed an architectural surveying of a bunch of those large-scale abandoned installations which precede the development of the flour factories that brought the industrial era. Our case of use focuses on the aceñas placed in a stretch of the Duero river, between Tordesillas and Toro (Spain). Our work includes the virtual reconstruction of mechanisms and a simulation of the processes that milling involves by using the transformation of hydrodynamical forces into mechanical power. Furthermore the architectural container, our development allows the visualization of the milling machinery running, enriched with a simulation of some aspect of the involved hydrodynamic aspects.

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