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Recent Findings and Open Problems in Some Fundamental Aspects of Mathematical Theory of Liquid-Solid Interaction

kterou prosloví

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Jde o čtrnáctou přednášku konanou
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Jiří Rákosník, ředitel

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Even though problems of liquid-solid interaction are more or less ubiquitous in many branches of applied science – ranging from small to large scale – a systematic mathematical treatment of some of their relevant and basic aspects has begun only about two decades ago. This late start is probably due to the intrinsic difficulty of the relevant equations. In fact, the presence of the solid (rigid or elastic) affects the flow of the liquid, and this, in turn, affects the motion of the solid, so that the problem of determining the flow characteristics is highly linked, typically, through a non-local coupling. It is just this latter feature that makes any fundamental mathematical problem related to fluid-solid interaction a particularly challenging one.

Objective of this lecture is to provide an account of a number of significant problems in the mathematical theory of liquid-solid interaction, as well as to present some new results and open questions, when the solid may be either rigid or elastic.

