1129-94-90 **Vladimir Shpilrain*** (shpil@groups.sci.ccny.cuny.edu), Department of Mathematics, The City College of New York, New York, NY 10031, and **Dima Grigoriev** and **Laszlo B. Kish**.

*Yao's millionaires' problem and public-key encryption.*

We offer efficient and practical solutions of Yao's millionaires' problem without using any one-way functions. Some of the solutions involve physical principles, while others are purely mathematical. One of our solutions (based on physical principles) yields a public-key encryption protocol secure against (passive) computationally unbounded adversary. In that protocol, the legitimate parties are not assumed to be computationally unbounded. (Received March 06, 2017)