1145-11-1659 **Jan Reimann*** (jan.reimann@psu.edu), Department of Mathematics, Pennsylvania State University, University Park, PA 16802. *Kolmogorov Complexity and Diophantine Approximation.*

The Kolmogorov complexity of an object is the length of shortest description of the object with respect to a universal computational device (for example, a universal Turing machine). It is possible to define Kolmogorov complexity also with respect to weaker computational frameworks, such as polynomial-time bounded Turing machines. To a certain extent, Diophantine approximation of real numbers can be seen as a version of complexity with extremely limited computational power. This viewpoint lets us see some core concepts and results in Diophantine approximation in an information theoretic light. For example, the irrationality exponent of a real equals its lower asymptotic information density. This opens the door to computability theoretic methods. I will illustrate this with the help of the Jarnik-Besicovitch theorem in metric Diophantine approximation and Thue's theorem on approximation of algebraic numbers. (Received September 23, 2018)