Year: 2013 | Vol.: 83 | Fasc.: 4

Title: Irrationality of infinite products

Author(s): NÉVJaroslav Hančl and Ondřej Kolouch

This paper deals with a sufficient condition for the infinite product of infinite series of rational numbers to be an irrational number. The proof is based on an idea of Erdős. As an example we obtain that the number $\prod_{m=1}^{\infty} \left(1 + \sum_{n=m}^{\infty} \frac{1}{2^{(n+1)!}+1}\right)$ is irrational.

Address:

Jaroslav Hančl Department of Mathematics and Centre of Excellence IT4Innovation division of UO Institute for Research and Applications of Fuzzy Modeling University of Ostrava 30. dubna 22 701 03 Ostrava 1 Czech Republic

Address:

Ondřej Kolouch Department of Mathematics Faculty of Science University of Ostrava 30. dubna 22 701 03 Ostrava 1 Czech Republic