# Substitutions and Cantor real numeration systems

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**Résumé**

In this talk, I will first present the general framework of Cantor real numeration system, which allow us to represent all non-negative real numbers via a bi-infinite sequence of real bases by using a greedy algorithm. These systems appear naturally in the framework of positional numeration systems for representing integers, and they generalize the extensively studied real base numeration systems introduced by Renyi in the late 1950's. Then I will focus on the notion of *integers* with respect to such systems, that is, numbers that have a greedy representation with only zeros after the radix point. We will see that we can code the sequence of gaps between consecutive such numbers by a symbolic sequence over ${N}$ which turn out to be an S-adic sequence. We will study further the property of this symbolic sequence in the case where the base sequence is periodic and characterize when it is a fixed point of a substitution. These results generalize results of Fabre and Burdík et al. obtained for the Rényi numerations systems. This is a joint work with Célia Cisternino, Zuzana Masakova and Edita Pelantova.

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