

MIXED NUMERATION BASES: A MEETING WITH HORNER, YANG, BAXTER AND FURSTENBERG

DAMIEN SIMON

ABSTRACT. Mixed numeration bases are as old as numeration itself. I will present here some families of mixed numeration bases and their algorithms of change of basis. We will see that these families have a nice geometric structure on the the lattices \mathbb{N}^d . This structure provides a generalization of Horner's algorithm. Besides, Yang–Baxter equation also appears and opens the way to statistical mechanics. As an example allthrough the presentation, we will consider Furstenberg's conjecture from the point of view of these numeration bases.