

POLYA-NESS OF LECACHEUX'S PARAMETRIC QUINTIC FIELDS

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ABSTRACT. A number field K , with ring of integers \mathcal{O}_K , is said to be a Polya field if the \mathcal{O}_K -module formed by the ring of integer-valued polynomials on \mathcal{O}_K admits a regular basis. The Polya group $\text{Po}(K)$ of K is a particular subgroup of the ideal class group Cl_K of K , that measures the failure of K being a Polya field. In this talk we discuss a new family of quintic non-Polya fields associated to Lecacheux's parametric quintics. Moreover, it is an interesting problem to study the embedding of a number field in a Polya field. Along this line, we will also explore bounds on the degree of smallest Polya fields containing them. Finally we show that such fields are non-monogenic number fields.