The relationship between non-catastrophicity and other properties of convolutional codes

In contrast to linear block codes, not every convolutional code possesses a parity-check matrix, i.e. not every convolutional code is non-catastrophic. However, the property of being non-catastrophic plays an important role for other characteristics of convolutional codes, such as column distances and free distance as well as self-duality. In this talk, we explain how the catastrophicity/non-catastrophicity of a convolutional code influences its distance properties and its self-duality. We also present some examples for code parameters for which these characteristics are independent of each other.

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Fecha: 6 de febrero de 2023, a las 13:00 horas.

Lugar: Seminario del departamento de Matemáticas

Biografía: Julia Lieb got her Bachelor, Master and PhD degree in Mathematics at the University of Würzburg (Germany). She had a Postdoc in Mathematics at the University of Aveiro, where she was member of the Systems and Control Group of the Center for Research and Development in Mathematics and Applications (CIDMA) at the Department of Mathematics of the University of Aveiro. Now, she is a postdoctoral researcher in the Applied Algebra group of Prof. Dr. Joachim Rosenthal at the University of Zurich. In September, she starts a research fellowship from the German Research Foundation. Her research topics are in coding theory, in particular convolutional codes.