FRAME MULTIPLIERS, SUFFICIENT CONDITIONS FOR INVERSION AND FORMULAS FOR THE INVERSE OPERATOR

DIANA STOEVA

AUSTRIAN ACADEMY OF SCIENCES, VIENNA

ABSTRACT. Frames extend orthonormal bases and still provide stable reconstructions, though not unique, which is of importance for certain applications. Frame multipliers are operators, which combine analysis of a signal via some frame, modification of the obtained coefficients, and synthesis with possibly other frame, leading to a modified signal. Such operators are of significant importance in many areas, e.g. in physics, signal processing, acoustics. In this talk, first we briefly recall the concepts of frame and multiplier. Then we focus on inversion of frame multipliers - we present sufficient conditions for invertibility, formulas for the inverse operator, and implementation of inversion algorithms. Finally, we illustrate the multiplier concept and some results with a musical example.

The talk is based on a joint work with Peter Balazs.