High-order Synchrosqueezing operators, their singularities, and its relation with Hankel matrices

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Abstract. In this talk we will discuss the high-order synchrosqueezing operators, with some special attention on their denominators. We will explore where they vanish and where they are above some level of noise. Some special Hankel matrices appear, and some properties can be derived. We will also discuss the zeros of the STFT, the zeros of the determinants of the mentioned Hankel matrices, and what information we can gain from them.