1163-93-977 **Hemant A. Patil*** (`hemant_patil@daiict.ac.in`), Room No. 4103, Faculty Block-4, Near Indroda Circle, DA-IICT, Gandhinagar, Gujarat 382007, India. *Modeling Spectrum Decay in Hilbert Space for Replay Spoof Detection.* Preliminary report.

Automatic Speaker Verification (ASV) refers to verifying the claimed identity of a speaker with the help of machines. We would like an ASV system to be robust under various adverse conditions, such as microphone and transmission channel, and acoustic noise. Such robustness makes an ASV system to be vulnerable to various spoofing attacks as it tries to nullify these effects and thereby making spoofed speech more close to the natural speech of genuine speakers. Hence, there is a need to develop countermeasures for various spoofing attacks. This talk will concentrate on developing Spoofed Speech Detection (SSD) system for replay spoof, which is very easy to mount but highly challenging to detect. Various technical challenges associated with replay SSD problem will be analyzed along with relevant mathematical modeling of replay. Since the replay spoof is known to be affected by bandpass frequency response characteristics of transmission channel and acoustic room, we model its spectrum decay in Hilbert space formulation, in particular, using Lipchitz global vs. local regularity to measure the spectrum decay using Lipchitz exponent. Finally, talk will discss Linear Prediction (LP)-based spectrum whitening method to model spectrum decay. (Received September 14, 2020)