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Speech Signal Processing (SSV)

Examiners	Prof. Dr. Timo Gerkmann
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Exam date	08/13/2019
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Department	Informatik
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- Draw the source filter model. What are the parameters?
- Formula for the filter output. Convolution $s(n) = e(n) * h(n)$
- What does a voiced excitation look like in time domain and frequency domain?
- What does voiced/unvoiced mean? Examples
- Give the difference equation of the speech production model in time domain. Derive the filter in the z-Domain
- What is LPC used for? Explain the term
- Why is the innovation not part of the LPC prediction formula?
- How many formants are to be expected in a signal with a given sampling rate?
- What is the sampling theorem? Explain
- How many autoregressive coefficients for LPC? $2n + 2$
- Why the $2n$? Why $+2$?
- What does the amount of quantization noise depend upon?
- Given a continuous sinusoidal signal. What would the quantizer output look like?
- Why do we use non-uniform quantization?
- What is adaptive quantization? Give a short explanation

