

Conventional cepstral speech modeling is based on the minimum phase parametric speech production model with infinite impulse response. The pole-zero transfer function of the vocal tract model is constructed from the real cepstrum using the Padé approximation. In this approach only the logarithmic magnitude frequency response of the corresponding speech frame is approximated and the stability of the model depends on the magnitude of the cepstral coefficients and the chosen order of the Padé approximation. In the proposed contribution the principle of the cepstral speech modeling using the complex cepstrum will be described. The obtained mixed-phase parametric speech model with finite impulse response contains also the information about the phase properties of the modeled speech frame. This model approximates the speech signal with higher accuracy than the model based on the real cepstrum, the numerical complexity and the memory requirements are at least twice greater.