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(54) Title: JOINT STEREO CODING IN COMPLEX-VALUED FILTER BANK DOMAIN

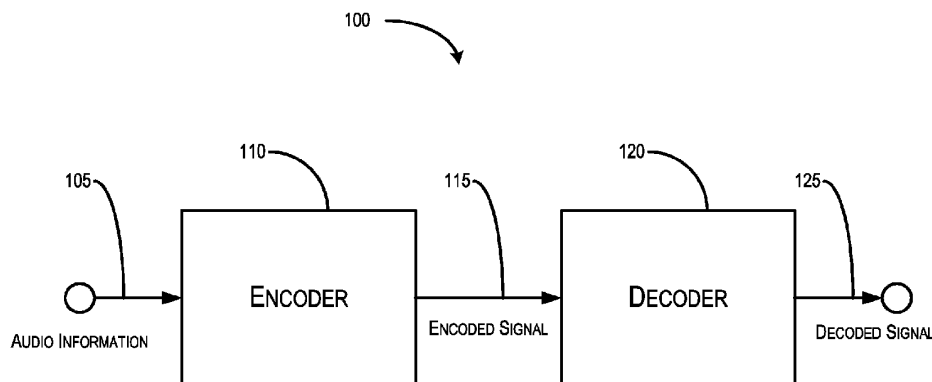


FIG. 1

(57) **Abstract:** Systems and methods of joint stereo coding. One method for encoding a stereo audio signal includes passing a left-channel and a right-channel of the stereo audio signal to a complex-valued filter bank analysis and calculating an energy of the left-channel, an energy of the right-channel, and a covariance of the left-channel and the right-channel. The method includes selecting a stereo coding mode in which to encode the left-channel and the right-channel. The method includes computing a phase difference between the left-channel and the right-channel, adjusting phase alignment between the left-channel and the right-channel based on the phase difference, transforming the aligned left-channel and the aligned right-channel to a Mid signal and a Side signal, generating a residual signal based on side prediction data and the Side signal; encoding the Mid signal, the residual signal, the phase difference, and the side prediction data in a bitstream, and transmitting the bitstream.

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