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(54) **PERCEPTUAL OPTIMIZATION OF MAGNITUDE AND PHASE FOR TIME-FREQUENCY AND SOFTMASK SOURCE SEPARATION SYSTEMS**

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(57) **ABSTRACT**

A method comprises: obtaining softmask values for frequency bins of time-frequency tiles representing an audio signal; reducing, or expanding and limiting, the softmask values; and applying the reduced, or expanded and limited, softmask values to the frequency bins to create a time-frequency representation of an estimated target source. An alternative method comprises, for each time-frequency tile: obtaining softmask values; applying the softmask values to the frequency bins to create a time-frequency domain representation of an estimated target source; obtaining a panning parameter and a source concentration estimates for the target source; determining, using the panning parameter estimate and the softmask values, a magnitude for the time-frequency representation of the estimated target source; determining, using the panning parameter estimate and the source phase concentration estimate, a phase for the time-frequency representation of the estimated target source; and combining the magnitude and the phase.