Docket #: S11-127

Array compression for 3D autocalibrating parallel imaging with Cartesian sampling

A three dimensional image, in a phased array magnetic resonance imaging (MRI) system is provided. Three dimensional k-space data within an auto calibration signal (ACS) region and outside the ACS region are acquired. The k-space data within the ACS region are converted into hybrid space ACS data. Compression matrices and alignment matrices of the compression matrices for the hybrid space ACS data are found along a readout direction. Alignment matrices are multiplied to the compression matrices to achieve the properly aligned compression matrices along the readout direction. All k-space data are converted into hybrid space. The properly-aligned compression matrices are applied to the hybrid space data to provide compressed data with fewer channels. The compressed data are used to form a three dimensional image.

Patents

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