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Title: Lifting Scheme: Application in Gravity and Magnetic Data Processing

Abstract:

The lifting scheme can be used to construct second generation wavelets. The second generation wavelets have the same properties with the first generation wavelets. And they are more adaptive and can be fast implemented. The lifting scheme can build wavelets on an interval, wavelets adapted to arbitrary size signals and irregular samples etc. The general wavelet transform has been widely used in the gravity and magnetic data processing. It can be used to do multi-scale analysis, denoise, separate local and regional field, detect field sources etc. All these applications can be done with the lifting scheme directly. Using lifting scheme different wavelets can be designed to satisfy some property such as orthogonal, vanishing moments. Combined with the analysis of field data, proper lifting scheme can be applied in the data processing. The lifting scheme has more advantages and it is a promising method in the gravity and magnetic data processing.

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