Fully-Automatic Left Ventricular Segmentation from Long-Axis Cardiac Cine MR Scans

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Highlights

- A fully-automatic method for left ventricle segmentation from long-axis cine cardiac MR data is presented and extensively validated.
- A combination of atlas-based and spatio-temporal registration approaches is used to accurately segment the left ventricle from cine MR sequence.
- Usage of probabilistic tissue maps in the preprocessing step improves the multi-atlas-based segmentation accuracy.
- Contour refinement steps that make use of local image intensity information further improves the segmentation accuracy.
- Fully-automatic left ventricle segmentation from horizontal and vertical long-axis scans enables accurate and fast analysis of the cardiovascular function.