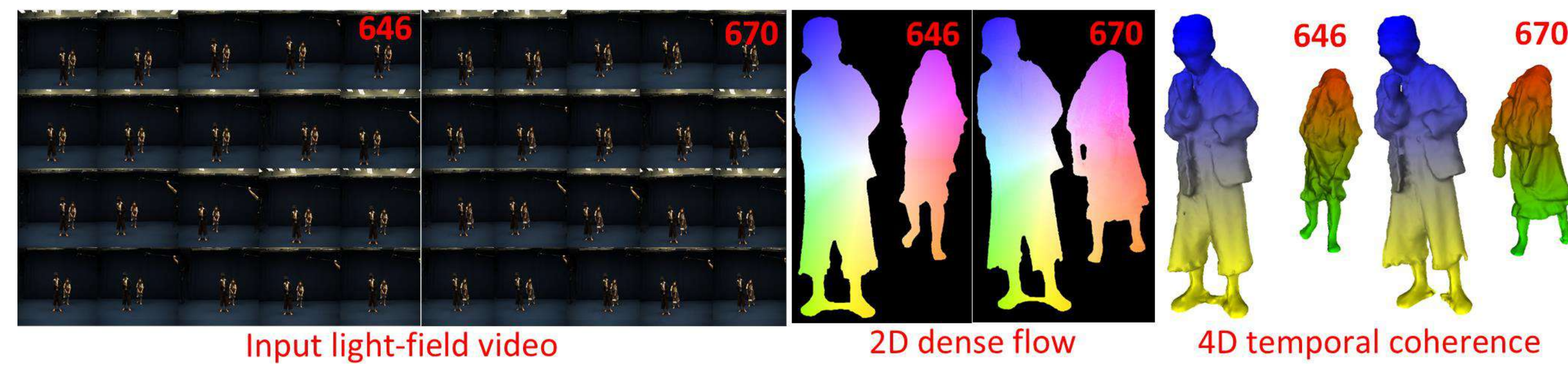


## MOTIVATION

Existing light-field methods suffer from following limitations:

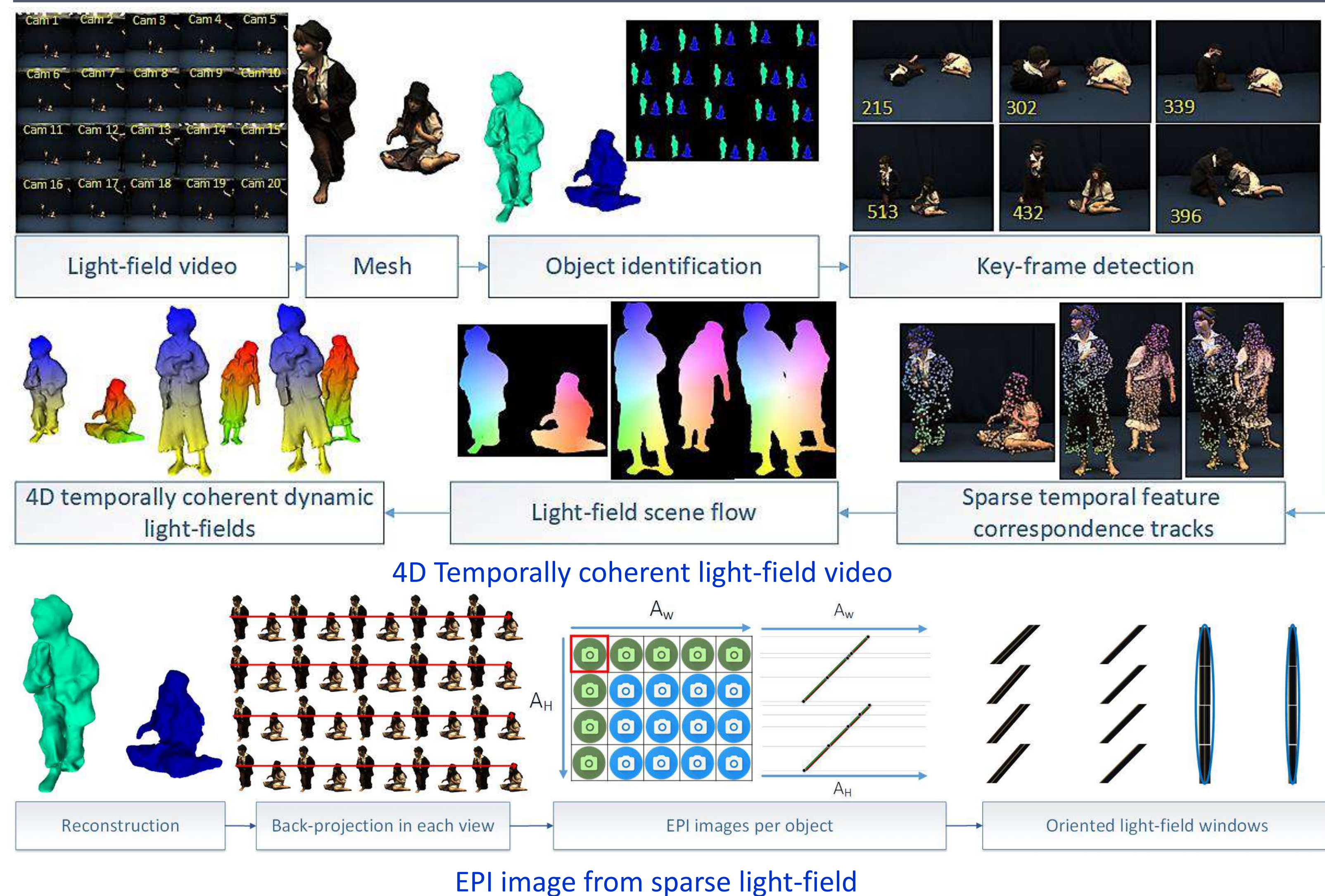
1. Limited to static scenes due to the requirement to acquire a dense scene representation;
2. Large amount of data and the absence of methods to infer temporal coherence pose major challenges in storage, compression and editing.



## CONTRIBUTIONS

1. Temporally coherent 4D reconstruction of dynamic light-field video;
2. EPI from sparse light-field video for spatio-temporal correspondence;
3. Sparse-to-dense light-field scene flow exploiting EPI image information;
4. Efficient light-field video representations to facilitate editing for live action VR.

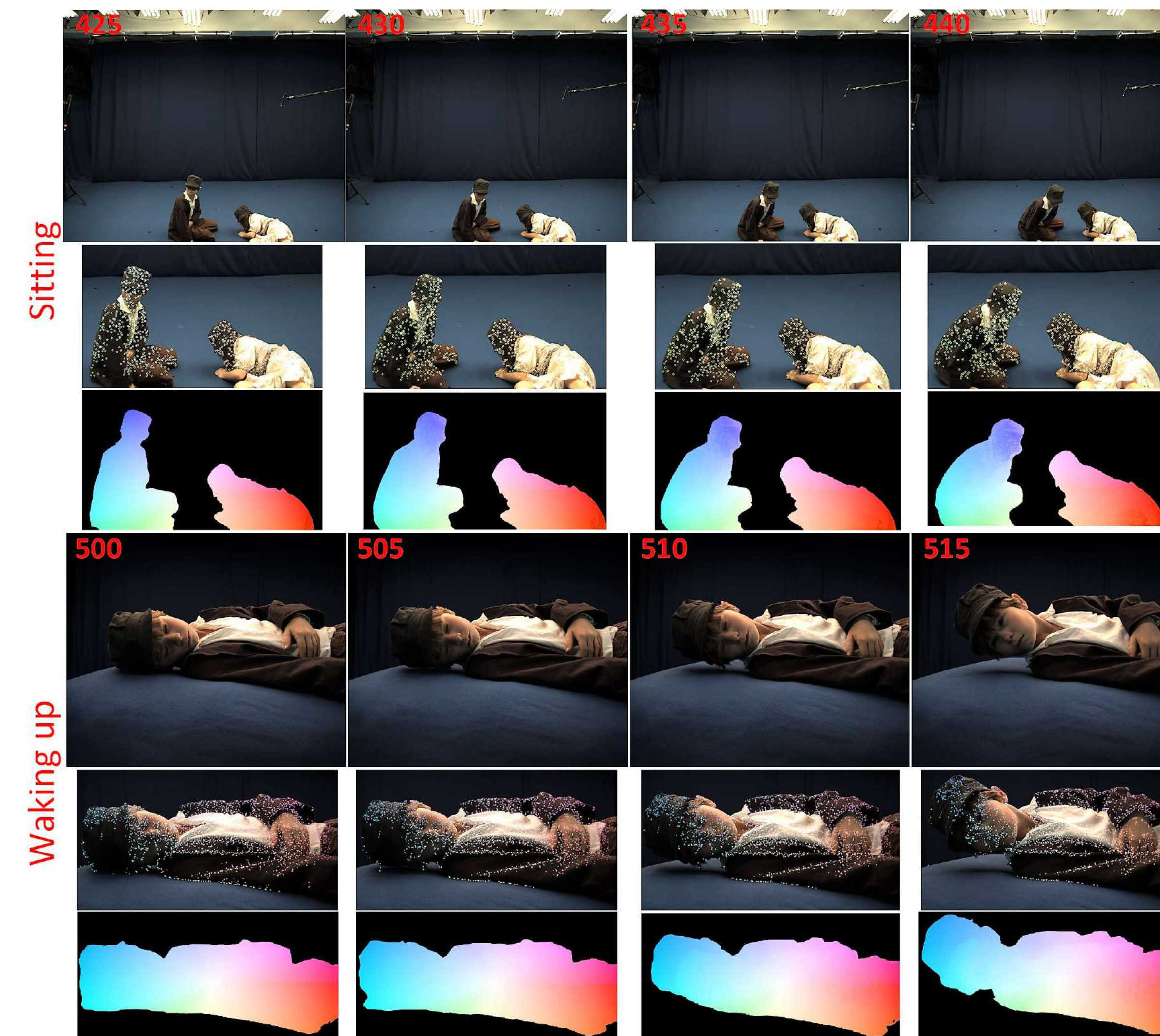
## METHODOLOGY



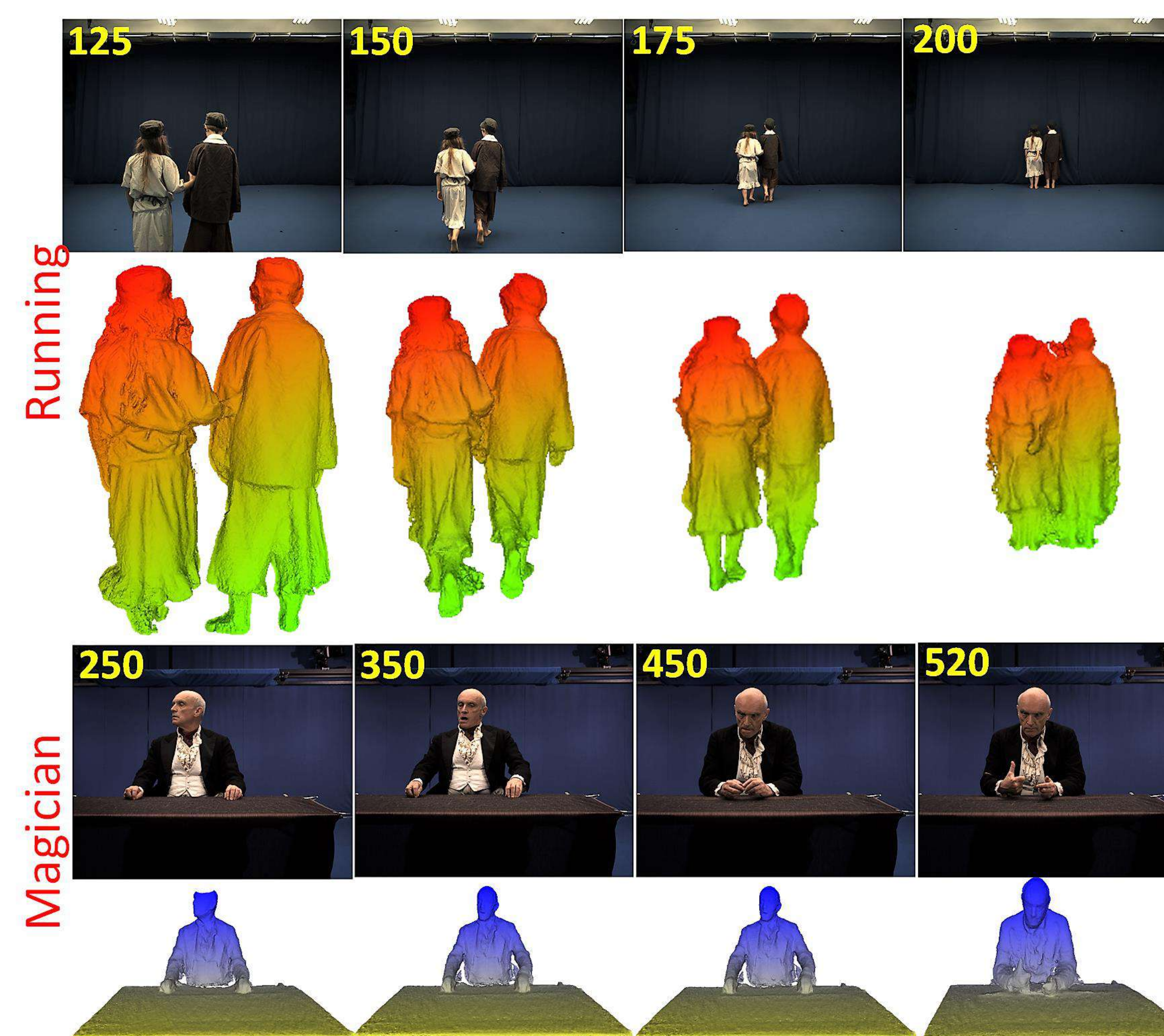
## ACKNOWLEDGEMENTS

This research was supported by the InnovateUK grant for Live Action Light fields for Immersive Virtual Reality Experiences (ALIVE) project (grant 102686).

## RESULTS

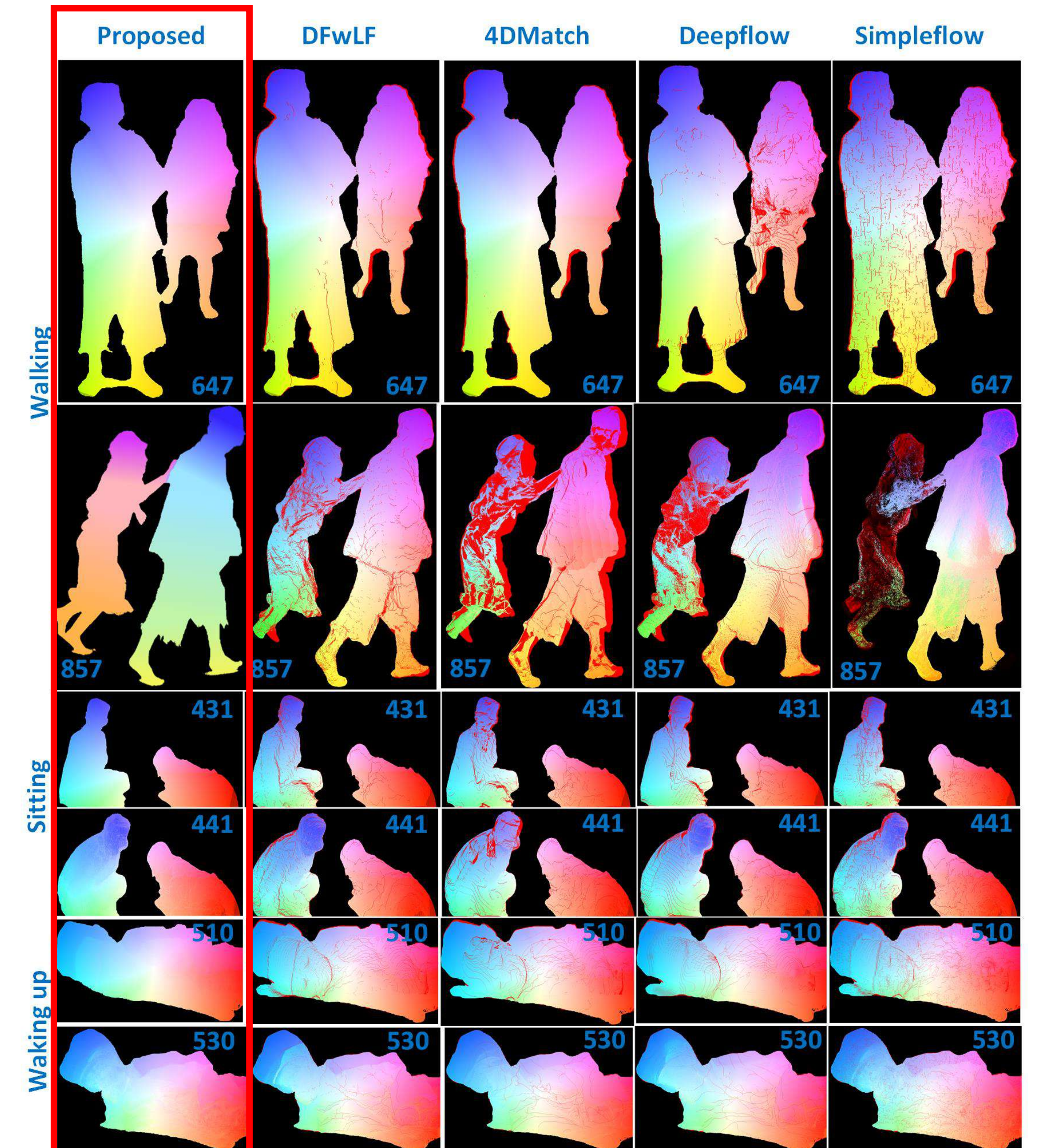


Sparse temporal correspondences and dense flow results on 2 light-field sequences: Sitting and Waking up



4D temporal alignment between frames for Walking and Magician dataset

## EVALUATION



Dense flow comparison results on different light-field sequences. DFwLF: dense flow without light-field consistency, 4DMatch[1], Deepflow[3] & Simpleflow[2]

Datasets	Prop.	DFwLF	4DM	DF	SF
Walking	<b>0.45</b>	0.59	0.58	0.81	1.05
Sitting	<b>0.51</b>	0.73	0.71	1.13	1.83
Waking up	<b>0.39</b>	0.56	0.53	0.89	1.17
Running	<b>0.65</b>	0.87	0.92	1.23	1.95
Magician	<b>0.59</b>	0.82	0.83	1.05	1.67

Silhouette overlap error for all the datasets. Prop. represents proposed approach, 4DM is 4DMatch, DF is Deepflow and SF is Simpleflow

## REFERENCES

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3. P. Weinzaepfel, J. Revaud, Z. Harchaoui, and C. Schmid. Deepflow: Large displacement optical flow with deep matching. In ICCV, 2013