

## **Dynamic Multi-person Mesh Recovery from Uncalibrated Multi-view Cameras**

### Problem

We address the problem of **directly** recovering multiple human bodies with unknown extrinsic camera parameters.



(a) Input

**Challenges:** 



(b) Estimated bodies and cameras

- > inter-person interactions and occlusions
- > a lack of dense corresponddences

# Key idea

Our key idea is **incorporating mo**tion prior knowledge into simultaneous optimization of extrinsic camera parameters and human meshes from noisy human semantics.

## Contribution

- > A one-stage optimization framework
- > A physics-geometry consistency to reduce low and high frequency noises in detected human semantics.
- > A novel latent motion prior to jointly optimize cameras and human motions from noisy inputs.

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(a) w/o physics-geometry

(b) VPoser-t

(c) MotionPrior





(d) VPoser-t + opt cam (e) MotionPrior + opt cam



### Method

Belagiannis *et al*. [2] Belagiannis *et al.* [3] Bridgeman *et al*. [6] Dong *et al*. [16] Chen *et al*. [9] Zhang *et al*. [62] Chu *et al*. [11] VPoser-t [48] Ours





Campus			Shelf		
A1	A2	A3	A1	A2	A3
82.0	72.4	73.7	66.1	65.0	83.2
93.5	75.7	85.4	75.3	69.7	87.6
91.8	92.7	93.2	99.7	92.8	97.7
97.6	93.3	98.0	98.9	94.1	<b>97.8</b>
97.1	94.1	98.6	99.6	93.2	97.5
_	_	_	99.0	96.2	97.6
98.4	93.8	98.3	99.1	95.4	97.6
97.3	93.5	98.4	99.8	94.1	97.5
97.6	93.7	<b>98.7</b>	99.8	96.5	97.6