

# Light Field Camera (LFC) vs Conventional Camera (CC)



Conventional Camera (CC)

Light field can be interpreted as multiple CC images, each captured with only a portion of CC aperture (or subaperture) open.

### Goal: Light Field Blind Motion Deblurring (LF-BMD) Motion blur is a common artifact in hand-held photography.







State-of-the-art LF-BMD method:

I. Requires estimation of 4D LF *altogether,* as it models blurred LF as a function of clean LF 'in toto'. Therefore, it can handle only downsampled LFs.

- 2. Requires high-end GPU for optimization.
- 3. Cannot handle irregular camera motion.

# Divide and Conquer for Full-Resolution Light Field Deblurring Mahesh Mohan M. R. and A. N. Rajagopalan IPCV lab, IIT Madras, India



esults:	Case	I: Irregular ego-r	notion ⇒
LF-resolution	State-of-the-art	Ours	
$\{x, y, u, v\}$	(GPU-based)	(CPU-based)	
$\{200, 200, 8, 8\}$	2 hrs, 20 mins	8.21 mins	
		(Gain 17.05×)	Blurred LF
$\{200, 289, 8, 8\}$	3 hrs, 17 mins	12.62 mins	
(Low-res. LF)		(Gain 15.61×)	
$\{433, 625, 15, 15\}$	Not feasible	38 mins*	
(Full-res. LF)	(Resource allocation error)	(Feasible)	
se 2: Full-resolution LF deblurring			
			Ours
Blurred LF	Ours	Srinivasan et	Srinivasan <i>et al.</i> + Bicubic interpolation