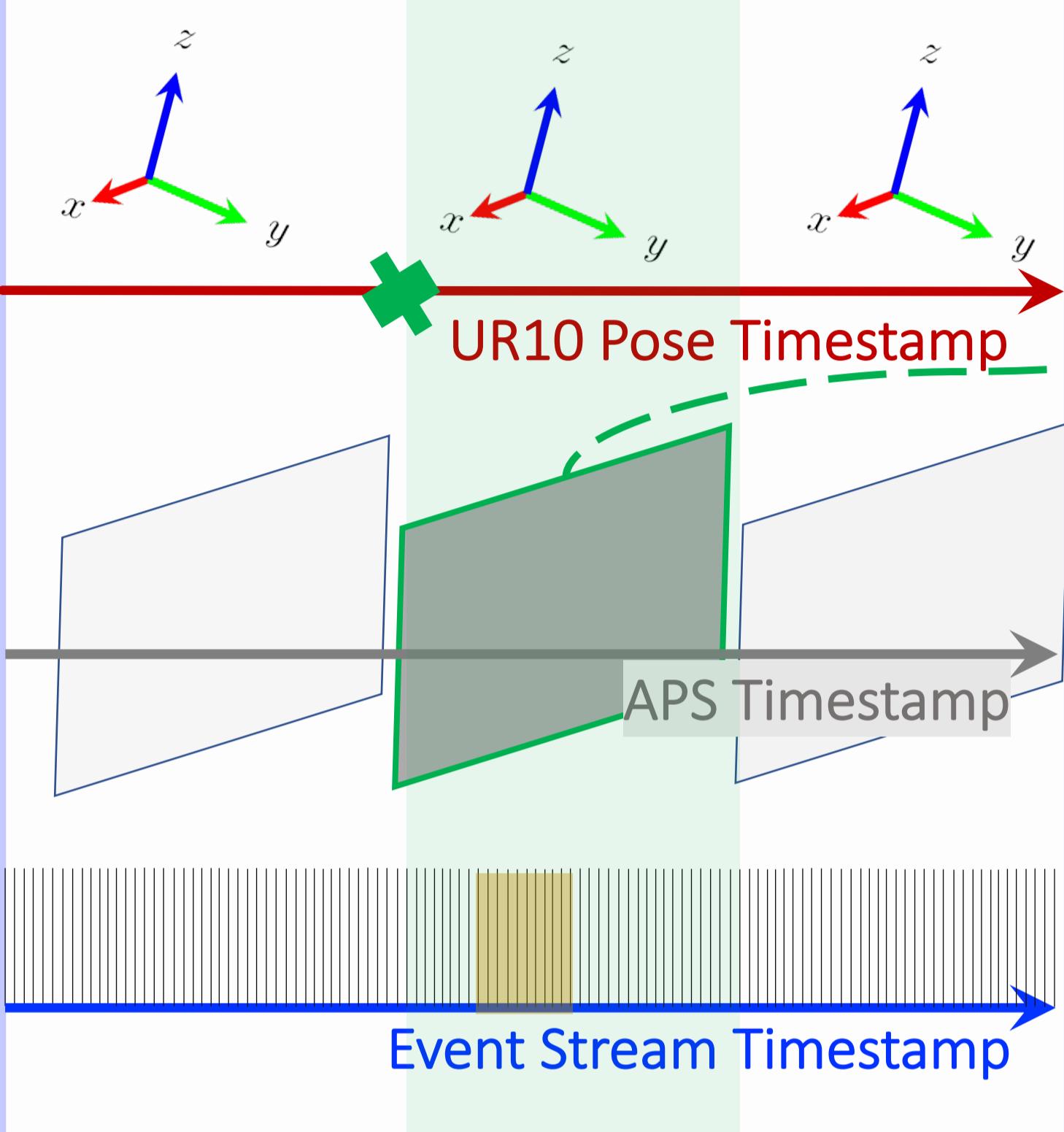**(I) Event-Image Synchronization**
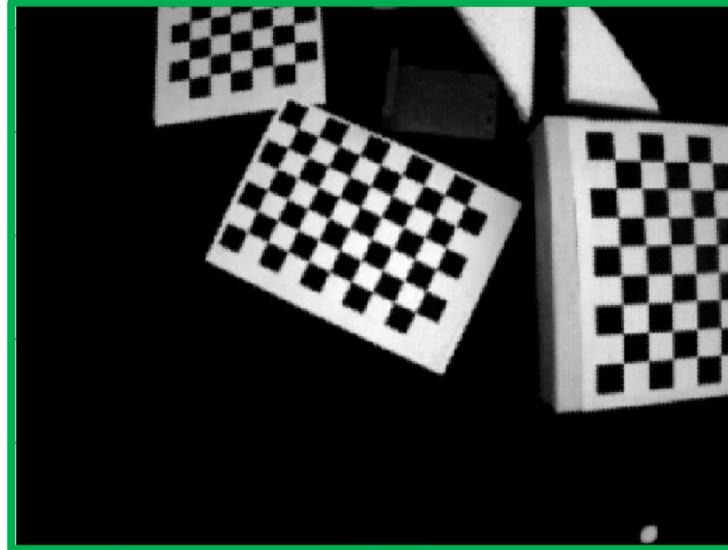
Experiment at Good Light Condition
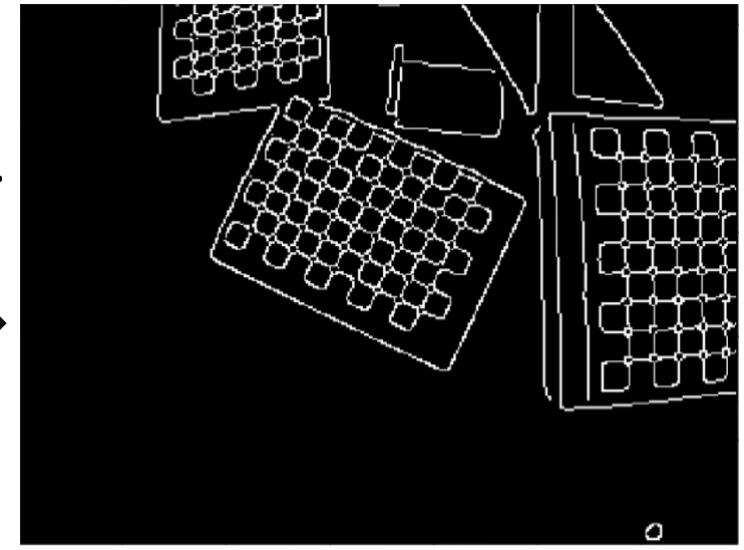
APS Image

Edge Data

Canny Detector

$z$ $x$ $y$

$z$ $x$ $y$

$z$ $x$ $y$

UR10 Pose Timestamp

APS Timestamp

Event Stream Timestamp
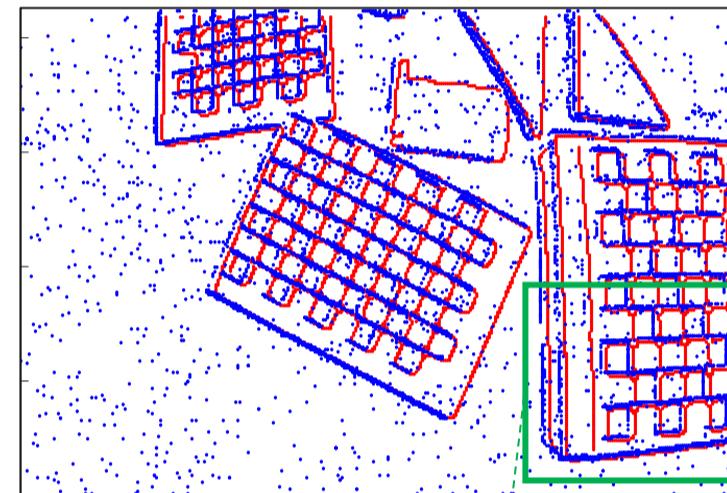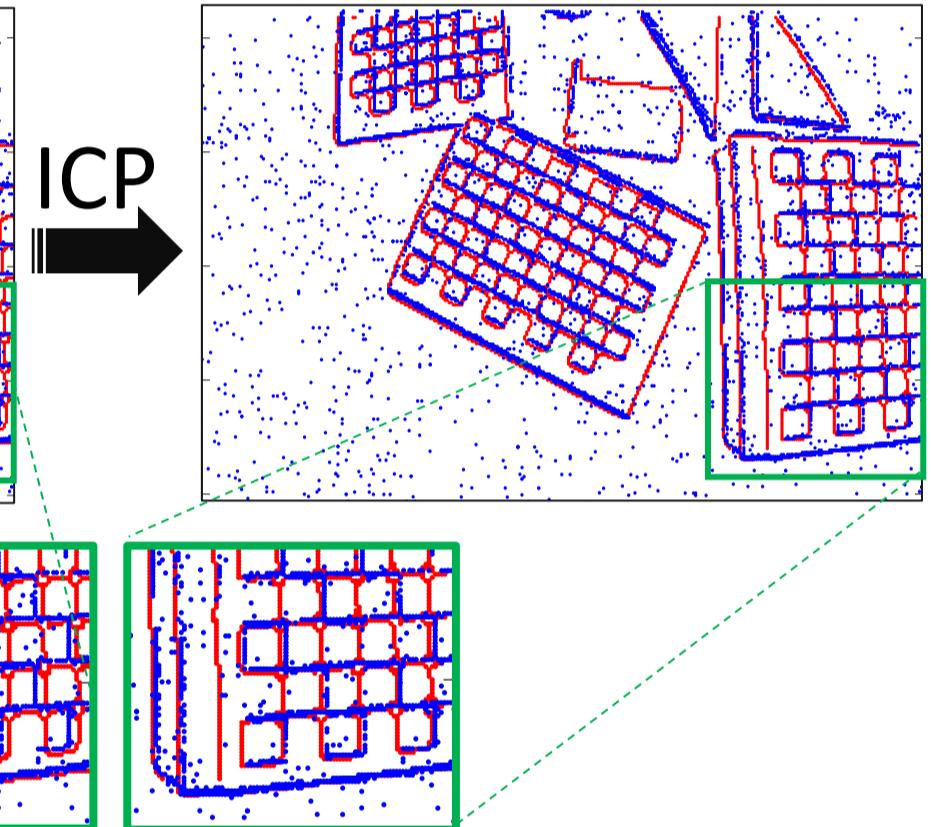
**(II) Event-Edge Fitting**

Before ICP
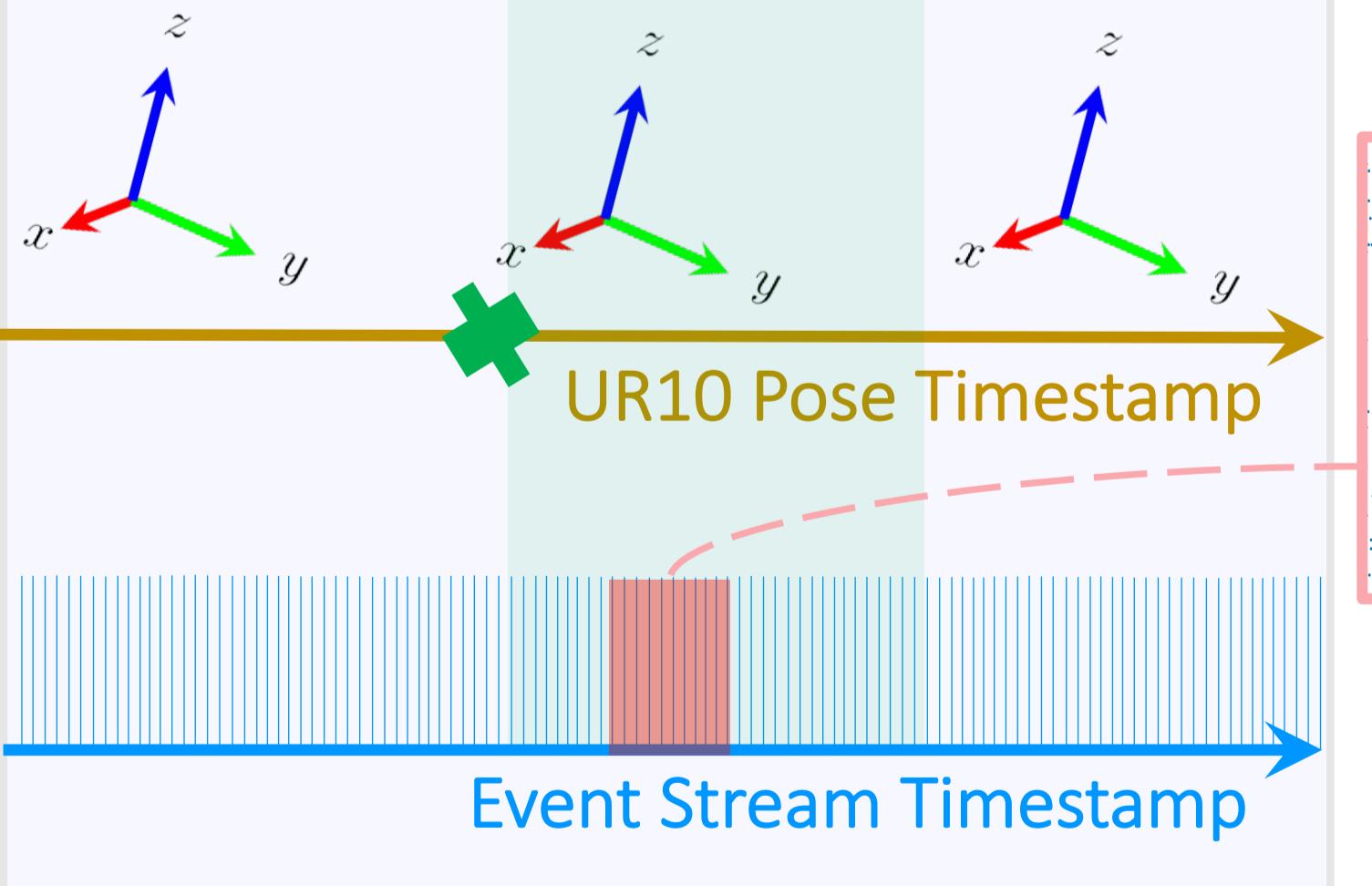
After ICP

ICP
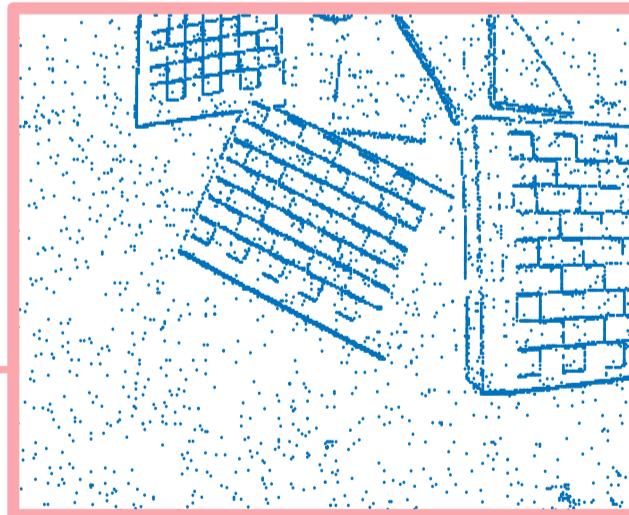
• Edge Data
• Events

Experiment at Low Light Condition

$z$ $x$ $y$

$z$ $x$ $y$

$z$ $x$ $y$

UR10 Pose Timestamp

Event Stream Timestamp

Raw Stream Data

**(III) Event-Labelling**

• Real Activity Event – Class 1
• Noise Event – Class 0

UR10 Pose

Stream of Events

Accumulated Events per ICP Iteration

APS Frame

Timestamp at which UR10 Started Periodic Motion