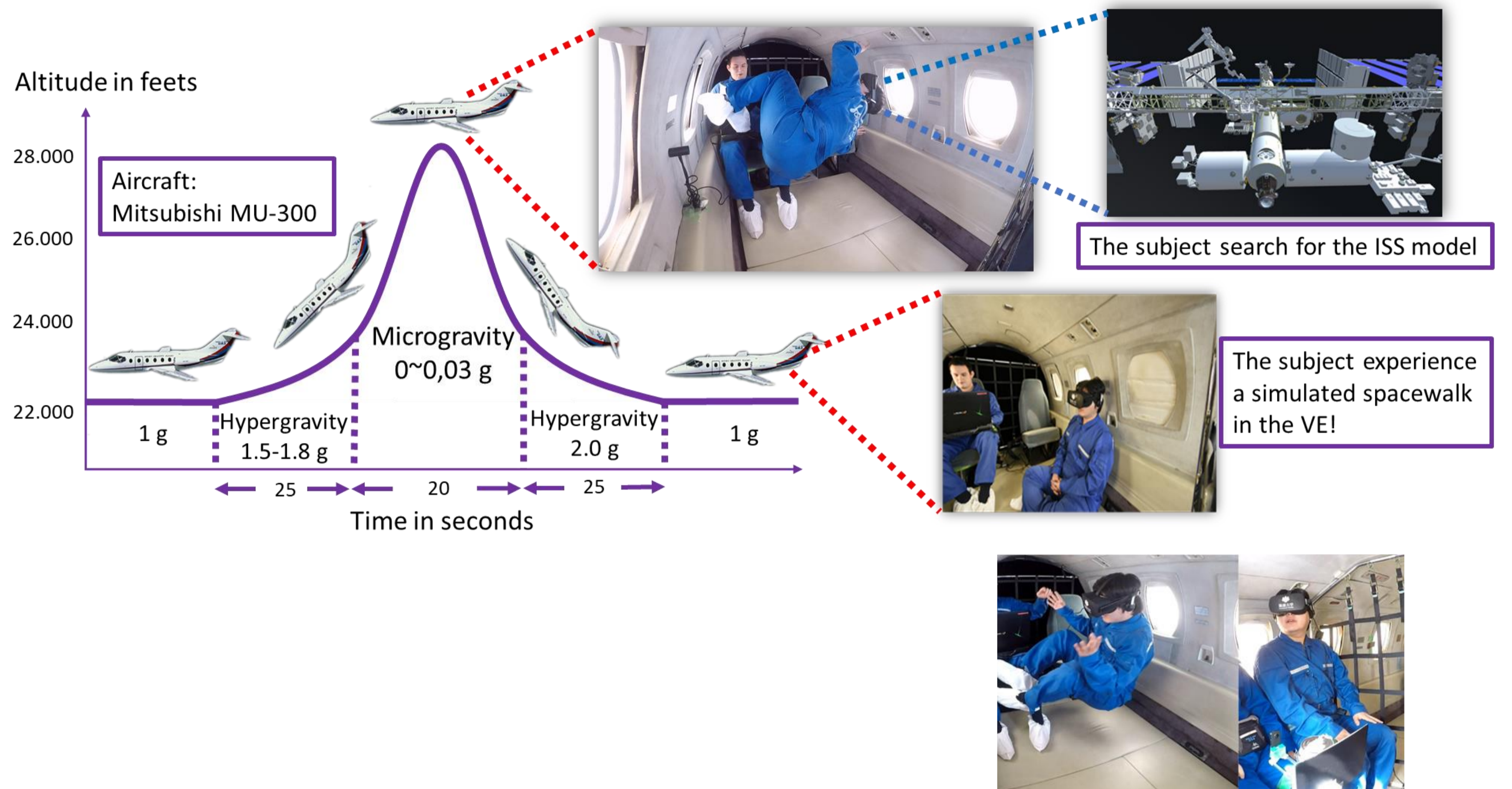


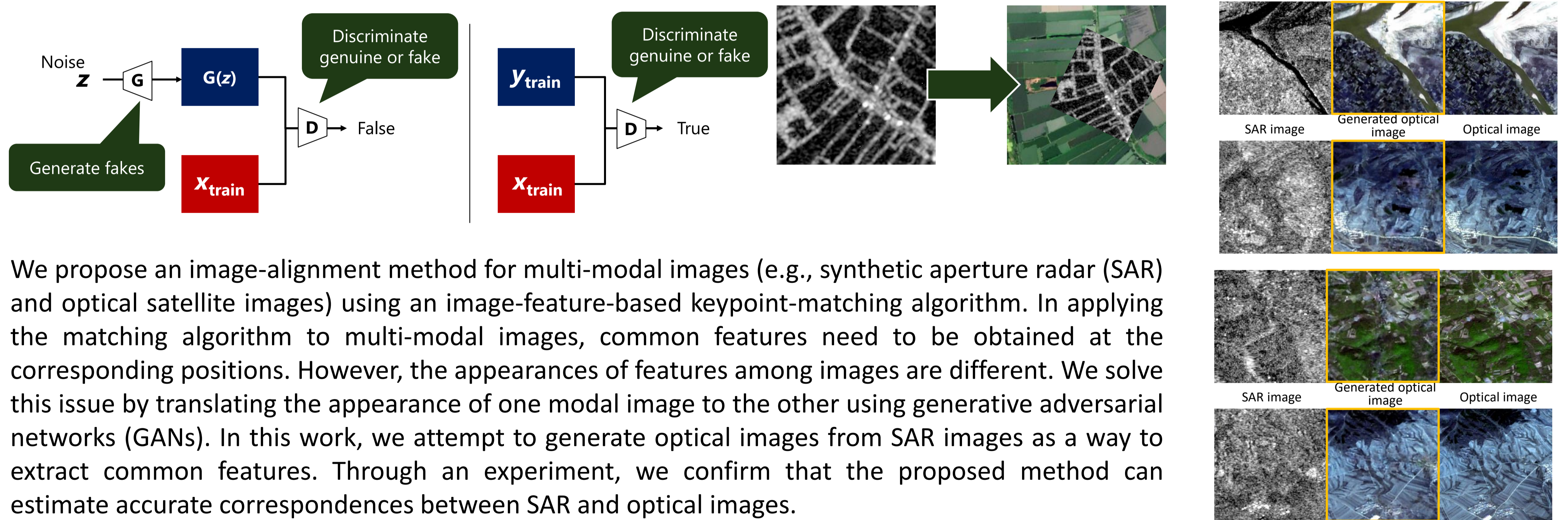
## Computational Media Group

### Visual exploratory activity under microgravity conditions in VR: An exploratory study during a parabolic flight

We explore the human visual exploratory activity (VEA) in a microgravity environment compared to one-G. Parabolic flights are the only way to experience microgravity without astronaut training, and the duration of each microgravity segment is less than 20 seconds. Under such special conditions, the test subject visually searches a virtual representation of the International Space Station located in his Field of Regard (FOR). The task was repeated in two different postural positions. Interestingly, the test subject reported a significant reduction of microgravity-related motion sickness while experiencing the VR simulation, in comparison to his previous parabolic flights without VR.

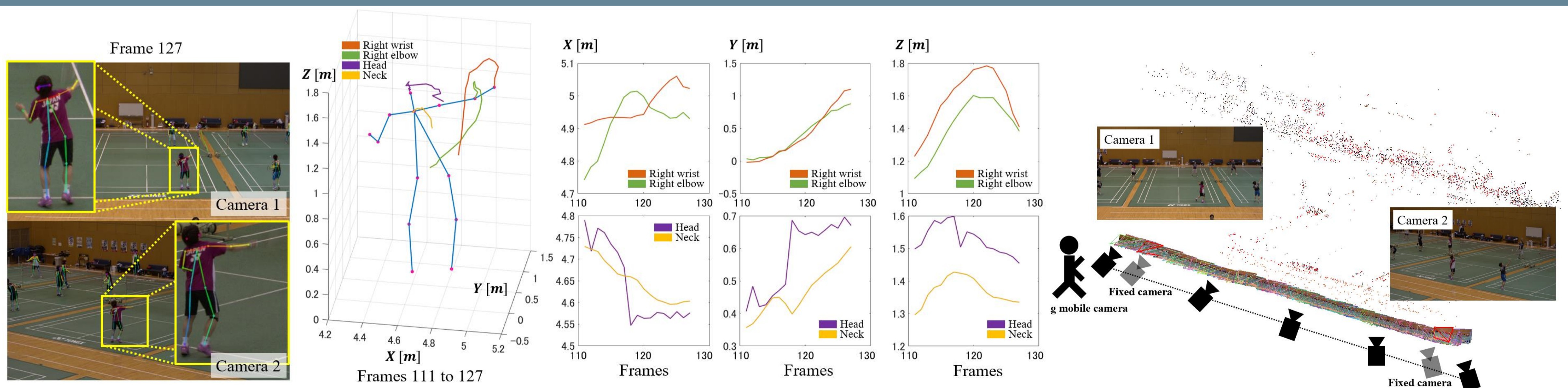


### Image Alignment between Multi-Modal Images Using Generative Adversarial Networks



We propose an image-alignment method for multi-modal images (e.g., synthetic aperture radar (SAR) and optical satellite images) using an image-feature-based keypoint-matching algorithm. In applying the matching algorithm to multi-modal images, common features need to be obtained at the corresponding positions. However, the appearances of features among images are different. We solve this issue by translating the appearance of one modal image to the other using generative adversarial networks (GANs). In this work, we attempt to generate optical images from SAR images as a way to extract common features. Through an experiment, we confirm that the proposed method can estimate accurate correspondences between SAR and optical images.

### 3D Joint Point Estimation of Badminton Players



Accurate estimation of multi-camera position and orientation is the key to 3D motion analysis of people actions. Vision-based camera calibration is very challenging when some cameras have a little overlapping area between them. One mobile camera may unite the shooting areas of the statically placed cameras by its video imaging.