

0.1 Capturing Data

The image capture module is started by:

```
$ roslaunch logitech_cam startup_camera2.launch
```

Commands are generated and logged by:

```
$ roslaunch logitech_cam logitech_cam_actuation.launch  
command_generator_args:="-c [[50,0,0],[-50,0,0]] -t  
600 -f 1" outfile:="/captureddata/onlypan600.raw.ba  
g"
```

This command will generate pan commands in each direction for 600 seconds and log the images and commands to the bag-file onlypan600.raw.bag

0.2 Pre Processing

The raw image stream is pre processed with pre_processor.py. The following command gives an processed bag onlypan600.processed.bag with image size 160 time 120.

```
$ rosrund logitech_cam pre_processor.py -i /home/adam/o  
nlypan600.raw.bag -o /home/adam/onlypan600.processed  
.bag -w 160 -h 120
```

To validate that the processing worked as it should, one can view the processed image streams by:

```
$ roslaunch logitech_cam show_processed.launch bagfile  
:="/home/adam/onlypan600.processed.bag"
```

0.3 Learning

The learning is initialized by:

```
$ rosrund logitech_cam learner.py -i /home/adam/onlypan  
600.processed.bag
```

0.4 Result

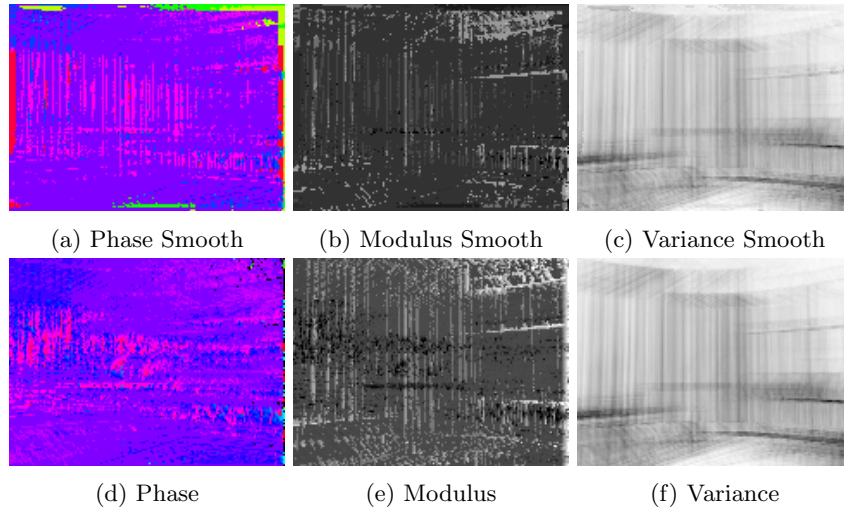


Figure 1: Diffeomorphism [500,0,0]

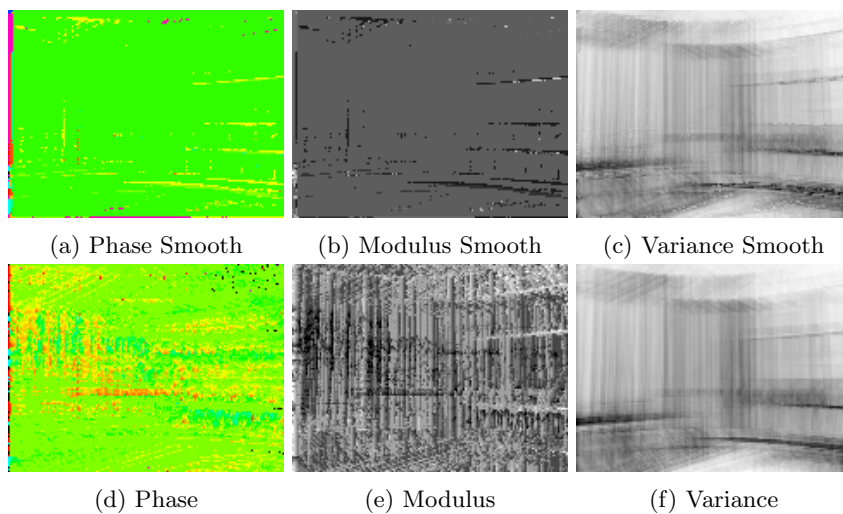


Figure 2: Diffeomorphism $[-500,0,0]$