# The Framework of the variable-frequency measurement method

2018/6/5

## Step1: Calibrate the camera and projector defocus kernel.

The folder SigmaCalibration.rar is for the calibration of defocus kernel of camera and projector.

[1]Y. Oyamada and H. Saito, “Focal pre-correction of projected image for deblurring screen image,” Comput. Vis. Pattern Recognition, 2007. CVPR ’07. IEEE Conf. on ., 1–8 (2007).

[2]S. Zhuo and T. Sim, “Defocus map estimation from a single image,” Pattern Recognition. 44, 1852–1858 (2011).

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The folder Stero_Rebuild_matlab_variablefrequency.rar is for the variable-frequency measurement .

## Step2: coarse measurement the depth of the object

Measure the object coarsely and obtain the coarse depth of the object to be measured

## Step3:design the variable-frequency phase with known coarse depth.

Calculate the defocus kernel map with coarse depth of the object measured. And generate the variable-frequency fringes.

//Calcufai_WH.m:

//NewPrjPattern_variFrequ.m

## Step4: re-measure the object with variable-frequency fringes.

Project the designed variable-frequency fringe patterns and reconstruction the object with high accuracy.

//temp_surf_rebuild_variFrequ.m