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import proper
import random
import numpy as np

#define a prescription for proper for the postfocal image
def postfocal_image(wavelength, gridsize, PASSVAL):
    diam = PASSVAL['diam']
    focal_length = PASSVAL['focal_length']
    beam_ratio = PASSVAL['beam_ratio']

    wfo = proper.prop_begin(diam, wavelength, gridsize, beam_ratio)

    proper.prop_circular_aperture(wfo, diam/2)
    proper.prop_define_entrance(wfo)
    #proper.prop_add_phase(wfo, np.random.rand(128,128) * 2 * np.pi)
    proper.prop_zernikes(wfo, [i+1 for i in range(len(PASSVAL['ZERN']))], PASS
VAL['ZERN'])
    print(PASSVAL['ZERN'])
    proper.prop_lens(wfo, focal_length)

    proper.prop_propagate(wfo, focal_length + PASSVAL['DEFOCUS'], TO_PLANE=False)

    wfo_s = proper.prop_get_amplitude(wfo)
    (wfo, sampling) = proper.prop_end(wfo)

    return (wfo, sampling)
```