1. DCP and DHP Images

Some simulated ortho-DCP images and equidistant projected DHP images are provided in the sample data directory. These images were simulated with large-scale emulation system (LESS) (Qi et al. 2019). The real LAIs of these images have been given in the image name, e.g., “LAI_0.78.tiff” indicates that the true LAI of the image is 0.78. All images have been processed as binary images, with the pixel values of 1 for leaves and 0 for gaps. The leaf angle distribution of most DCP images and all DHP images was spherical, except for scenes with LAI of 1.29, 2.12, 2.59, 2.98, 3.30 and 4.15. However, the leaf projection function (G) could be set to 0.5 when calculating the LAI. In addition, there are not any branch in the simulated scenes, and all trees in the simulated scenes are broadleaf species. The directory named "r=X", e.g., "r=5", in the sample data directory indicates that the “Mean leaf radius” parameter of these images in this directory is 5.

2. TRAC Transect

The TRAC transect (named trc_transect) in the TRAC directory was measured in an apricot orchard with a slope of about 0°. The field measurements were conducted under clear, windless weather conditions. According to the instructions, the experimenter walked at a uniform speed in the plots with the TRAC instrument in hand and avoided their shadow blocking the probe. According to the results of the TRAC Android, the “total gap probability” and “solar zenith angle” were 0.490533 and 35.41, respectively. The mean leaf radius was about 6 cm. The walking speed of the surveyor holding the TRAC was about 0.3 m. Since the TRAC recorded the transmitted direct light at 32 Hz, the resolution of this TRAC measurement was about 1 cm. Thus, the parameter “Mean leaf radius (unit: pixel)” was 6.