Deriving the loss map for S-pol

Note

- Calculation is based on Aso & Enomoto, JGW-1910380.
- Mirror maps were provided by Caltech.

ITMX

A. Using maps at 0, 90, 45, 135 degree rotations

1. a(0) map (left) and a(pi/4) map (right) in Aso-san's calculation [nm].



2. Theta map [deg].



3. Loss map.



B. Using maps at 180, 270, 225, 315 degree rotations

1. a(180) map (left) and a(5*pi/4) map (right) in Aso-san's calculation [nm].



2. Theta map [deg].



3. Loss map.



ITMY

A. Using maps at 0, 90, 45, 135 degree rotations



1. a(0) map (left) and a(pi/4) map (right) in Aso-san's calculation [nm].

2. Theta (angle between e' axis and S-pol axis, see, Aso-san's calculation) map [deg].



3. Loss map in S-pol (see, Enomoto-san's calculation)



B. Using maps at 180, 270, 225, 315 degree rotations

1. a(180) map (left) and a(5*pi/4) map (right) in Aso-san's calculation [nm].



2. Theta map [deg].







Comment

A.2 and A.3 agree with B2 and B3, respectively, with a 180 degree rotation. It makes sense. Loss maps are calculated correctly by Aso-Enomoto formulae. The loss value of 0.2 maximum does not contradict to the measured average loss (~0.1).