

2 **Supporting Information for**

3 **Upper-mantle anisotropy in the southeastern margin of the Tibetan Plateau revealed by**  
4 **fullwave SKS splitting intensity tomography**

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12 **This Supporting Information contains 8 Supplementary Figures S1-S8.**

13 **Figure S1:** Resolution test results at different depths for the azimuth of symmetry axis  
14 using 1° x 1° checkerboard and different damping factors.

15 **Figure S2:** Resolution test results at different depths for anisotropy strength using 1° x 1°  
16 checkerboard and different damping factors.

17 **Figure S3:** Resolution test results at different depths for the azimuth of symmetry axis  
18 using 1.5° x 1.5° checkerboard and different damping factors.

19 **Figure S4:** Resolution test results at different depths for anisotropy strength using 1.5° x  
20 1.5° checkerboard and different damping factors.

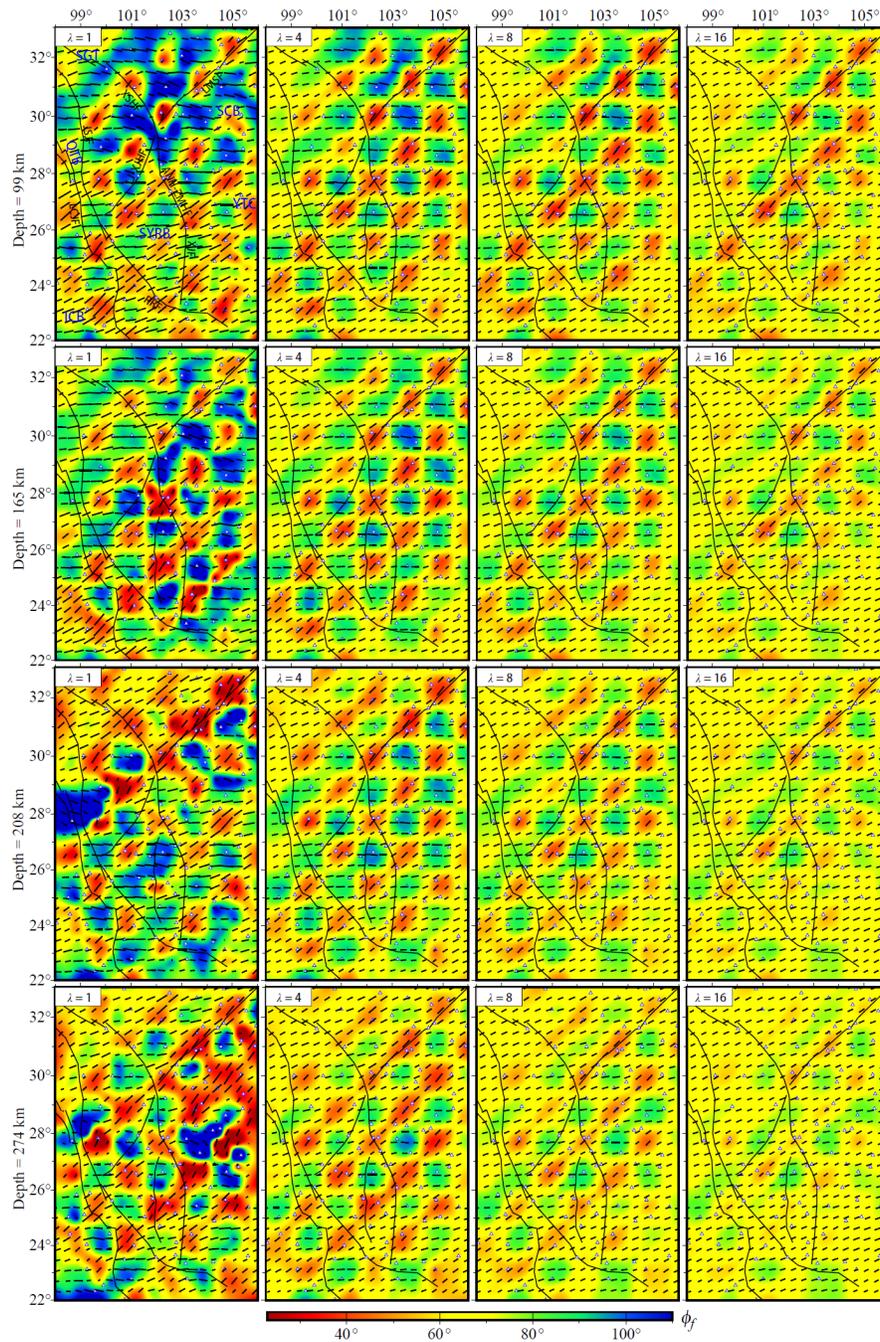
21 **Figure S5:** Resolution tests for the azimuth of symmetry axis using a 2-layer input model  
22 and different damping factors.

23 **Figure S6:** Resolution tests for anisotropy strength using a 2-layer input model and  
24 different damping factors.

25 **Figure S7:** Resolution tests for the azimuth of symmetry axis using a 4-layer input model  
26 and different damping factors.

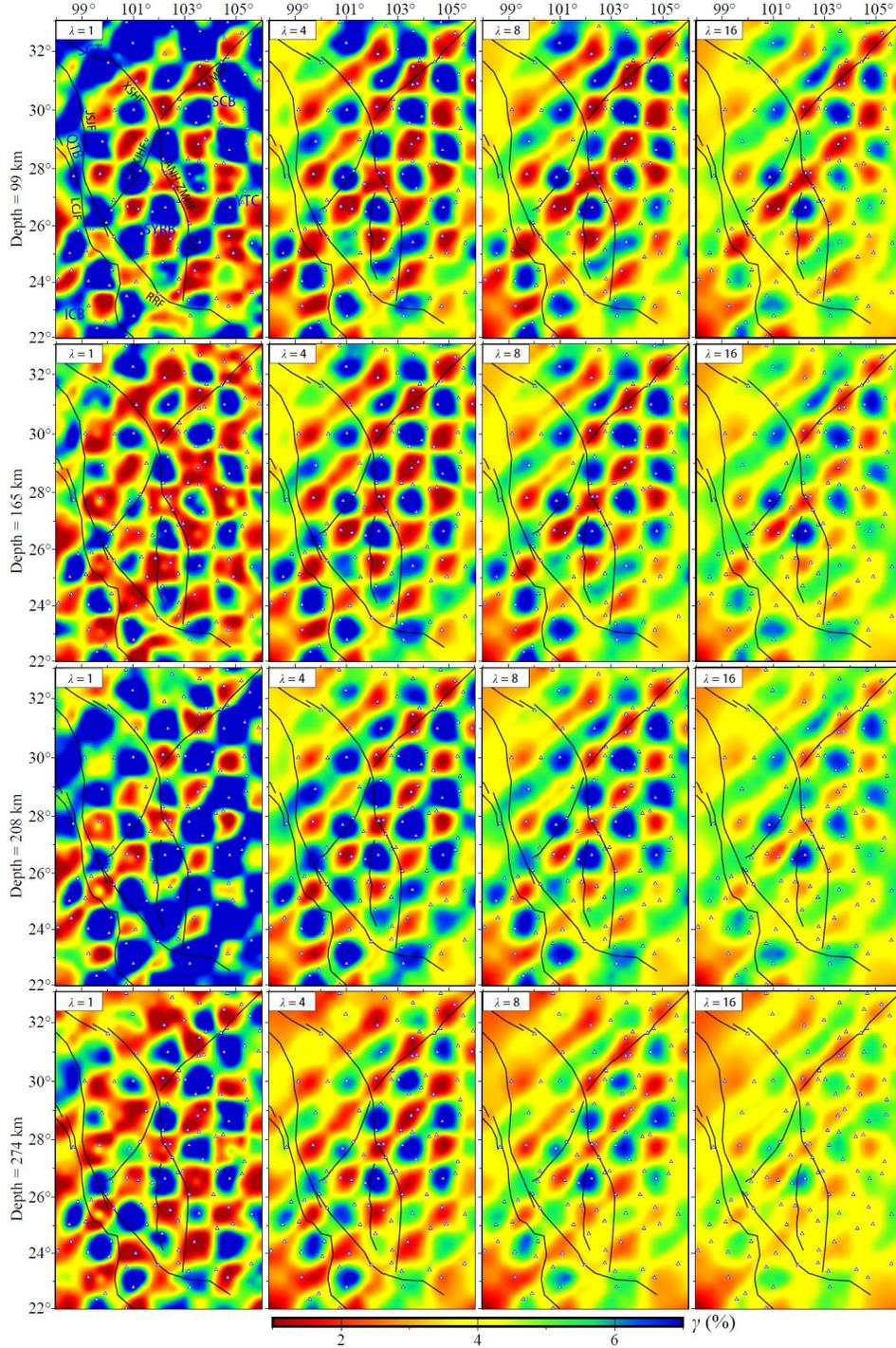
27 **Figure S8:** Resolution tests for anisotropy strength using a 4-layer input model and  
28 different damping factors.

29 **Supplementary Figures**



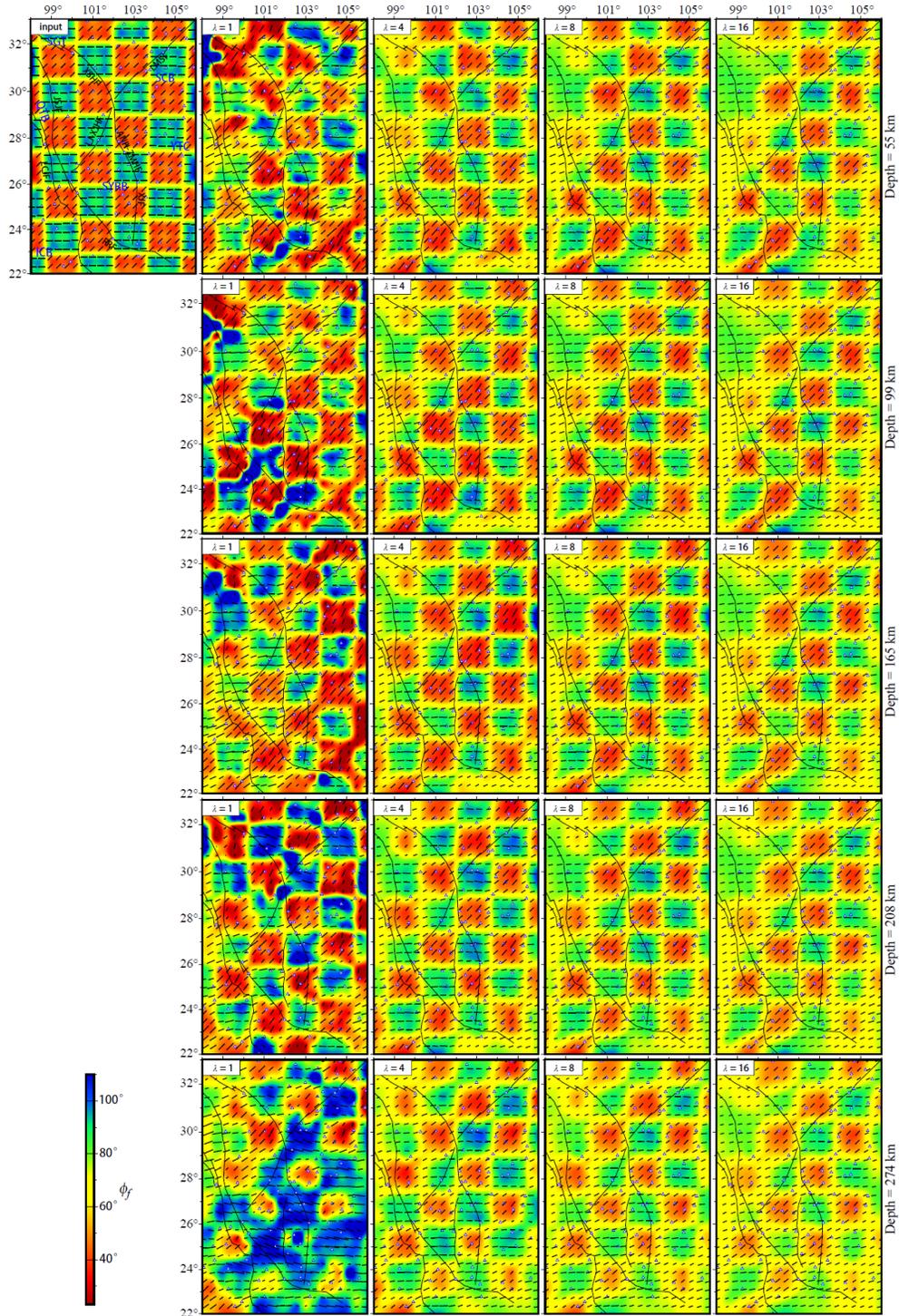
30

31 **Figure S1.** Resolution tests for the azimuth of symmetry axis using  $1^\circ \times 1^\circ$  checkerboard.  
 32 The input model (top-left panel of Figure 8) has horizontally alternating azimuthal angles  
 33 of fast axes  $\phi_f = 90^\circ$  and  $\phi_f = 45^\circ$  shown by both the color and the directions of the line  
 34 segments, and a fixed anisotropy strength  $\gamma = 4\%$  represented by the lengths of the line  
 35 segments. Shown here are recovered models using different damping factors (left to right)  
 36 at different depths (top to bottom).



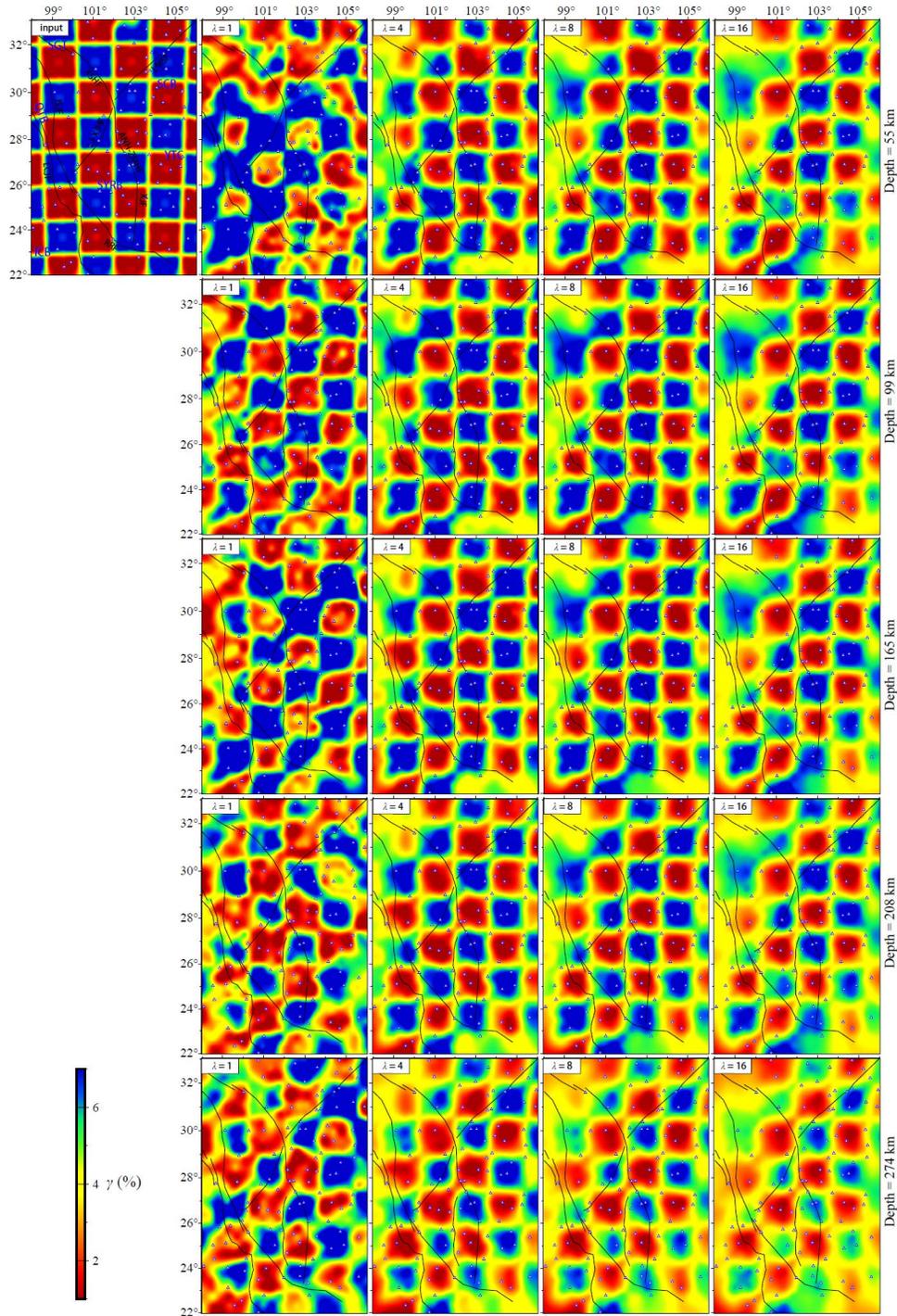
37

38 **Figure S2.** Resolution tests for anisotropy strength using  $1^\circ \times 1^\circ$  checkerboard. The input  
 39 model (top-left panel of Figure 8) has horizontally alternating anisotropy strengths shown  
 40 by the colors representing perturbations of  $\delta\gamma = \pm 0.03$  relative to a background  
 41 anisotropy strength of  $\gamma = 0.04$  and a fixed azimuthal angle of symmetry axis  $\phi_f = 22.5^\circ$ .  
 42 Shown here are recovered models using different damping factors (left to right) at different  
 43 depths (top to bottom).



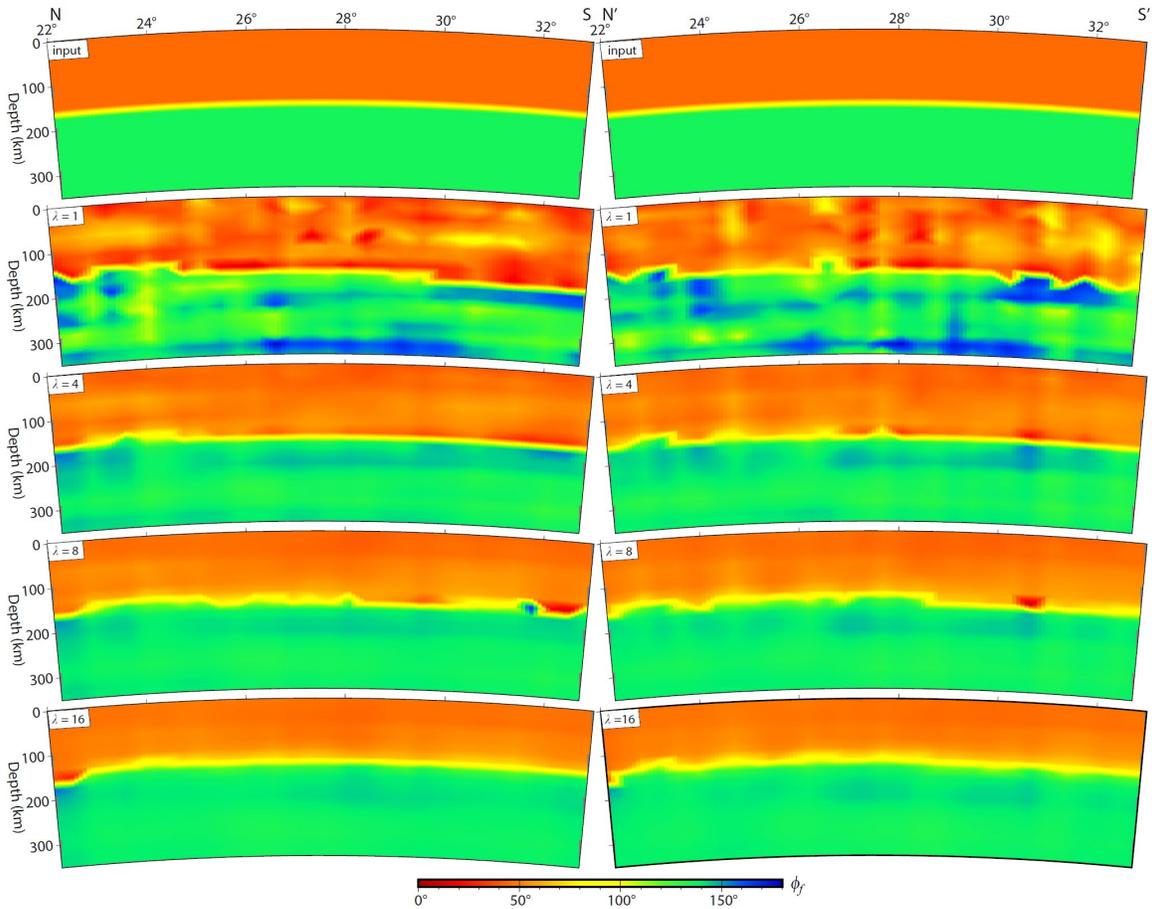
44

45 **Figure S3.** Resolution tests for the azimuth of symmetry axis using  $1.5^\circ \times 1.5^\circ$   
 46 checkerboard. The input model (top-left panel) has horizontally alternating azimuthal  
 47 angles of fast axes  $\phi_f = 90^\circ$  and  $\phi_f = 45^\circ$  shown by both the color and the directions of  
 48 the line segments, and a fixed anisotropy strength  $\gamma = 4\%$  represented by the lengths of  
 49 the line segments. The rest of the panels show recovered models using different damping  
 50 factors (left to right) at different depths (top to bottom).



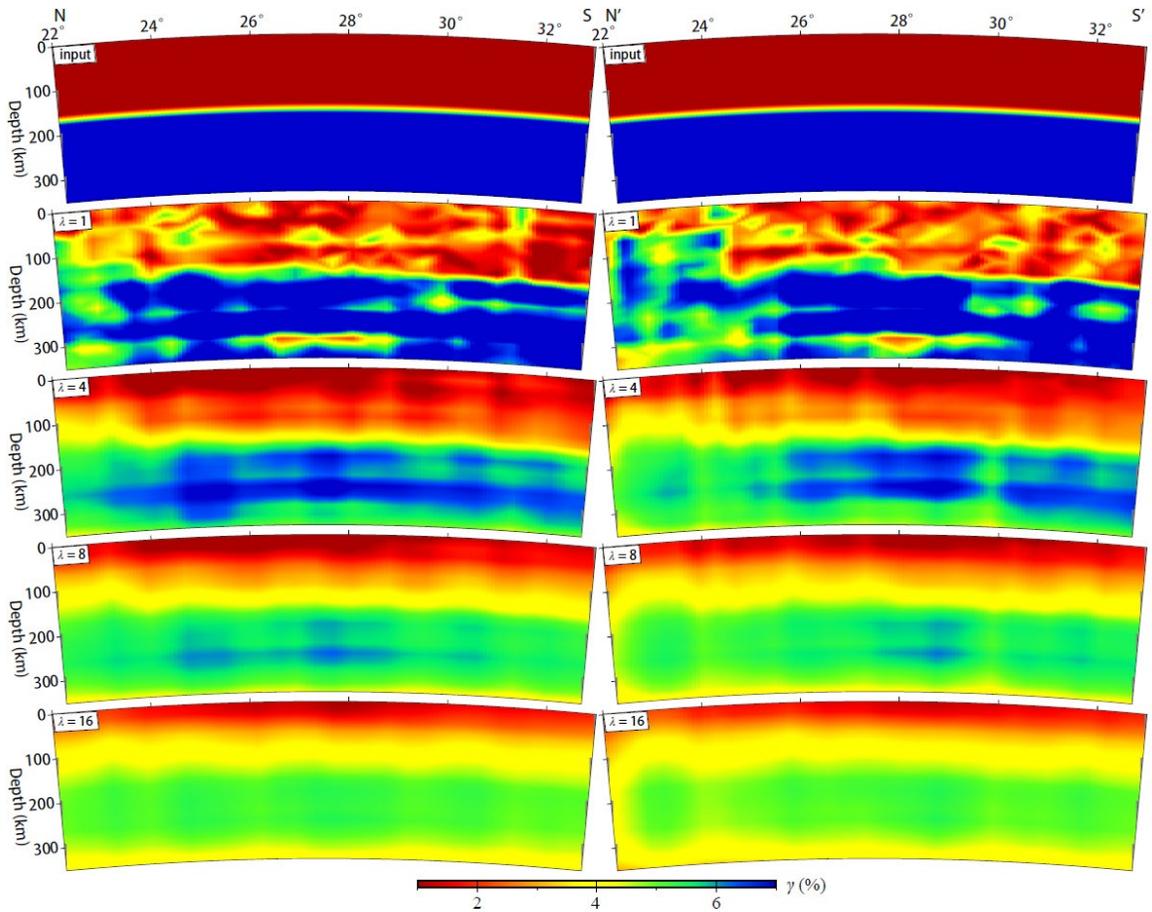
51

52 **Figure S4.** Resolution tests for anisotropy strength using  $1.5^\circ \times 1.5^\circ$  checkerboard. The  
 53 input model (top-left panel) has horizontally alternating anisotropy strengths shown by the  
 54 colors representing perturbations of  $\delta\gamma = \pm 0.03$  relative to a background anisotropy  
 55 strength of  $\gamma = 0.04$  and a fixed azimuthal angle of symmetry axis  $\phi_f = 22.5^\circ$ . The rest  
 56 of the panels show recovered models using different damping factors (left to right) at  
 57 different depths (top to bottom).



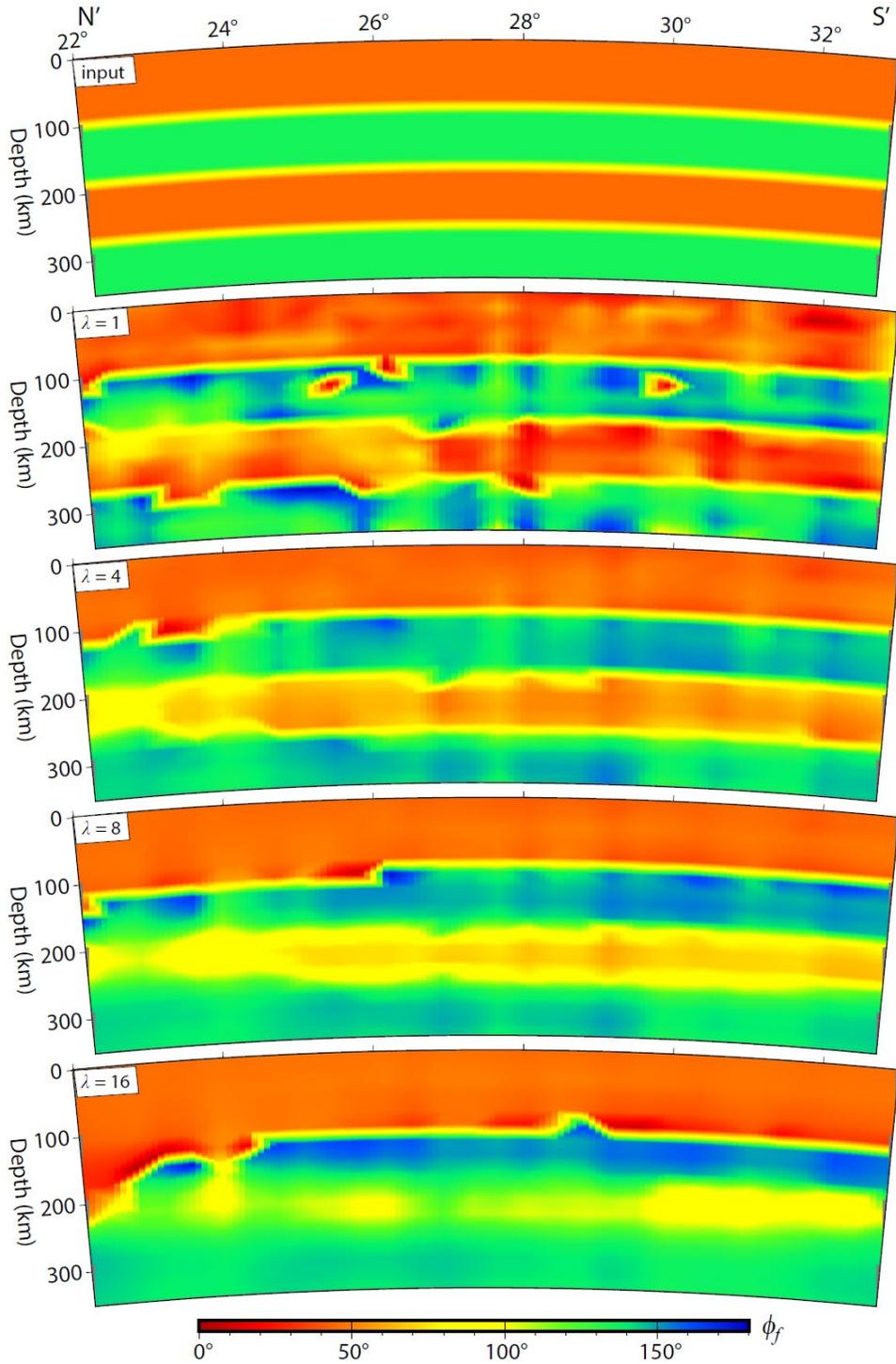
58

59 **Figure S5.** Resolution tests for an input model with 2 layers of different azimuthal angles  
 60 of symmetry axes  $\phi_f = 45^\circ$  and  $\phi_f = 135^\circ$  but a fixed anisotropy strength of  $\gamma = 4\%$ .  
 61 Shown here are the input models (top two panels) along the NS and N'S' cross-sections  
 62 (see top-left panel in Figure 8 for the locations of the cross-sections) and recovered models  
 63 for different damping factors  $\lambda$  (lower panels).



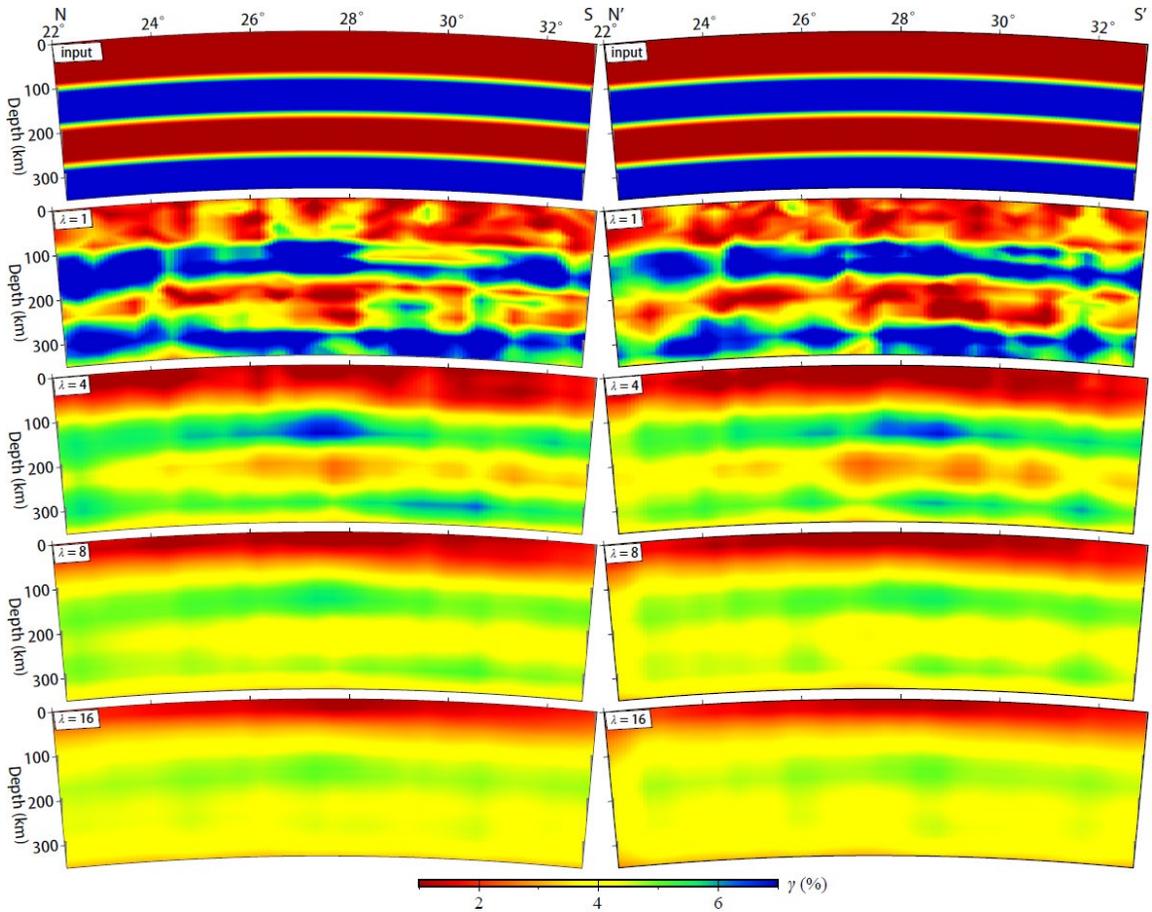
64

65 **Figure S6.** Resolution tests for an input model with 2 layers of different anisotropy  
 66 strengths shown by the colors representing perturbations of  $\delta\gamma = \pm 0.03$  relative to a  
 67 background anisotropy strength of  $\gamma = 0.04$  and a fixed azimuthal angle of symmetry axis  
 68  $\phi_f = 22.5^\circ$ . Shown here are the input models (top two panels) along the NS and N'S'  
 69 cross-sections (see top-left panel in Figure 8 for the locations of the cross-sections) and recovered  
 70 models for different damping factors  $\lambda$  (lower panels).



71

72 **Figure S7.** Resolution tests for an input model with 4 layers of alternating azimuthal angles  
 73 of symmetry axes  $\phi_f = 45^\circ$  and  $\phi_f = 135^\circ$  but a fixed anisotropy strength of  $\gamma = 4\%$ .  
 74 Shown here are the input model (top panel) along the N'S' cross-section (see top-left panel  
 75 in Figure 8 for the location of the cross-section) and recovered models for different  
 76 damping factors  $\lambda$  (lower panels).



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78 **Figure S8.** Resolution tests for an input model with 4 layers of alternating anisotropy  
 79 strengths shown by the colors representing perturbations of  $\delta\gamma = \pm 0.03$  relative to a  
 80 background anisotropy strength of  $\gamma = 0.04$  and a fixed azimuthal angle of symmetry axis  
 81  $\phi_f = 22.5^\circ$ . Shown here are the input models (top two panels) along the NS and N'S'  
 82 cross-sections (see top-left panel in Figure 8 for the locations of the cross-sections) and recovered  
 83 models for different damping factors  $\lambda$  (lower panels).