

Inversion for the secret model

Code developer: Sasaki (2001)

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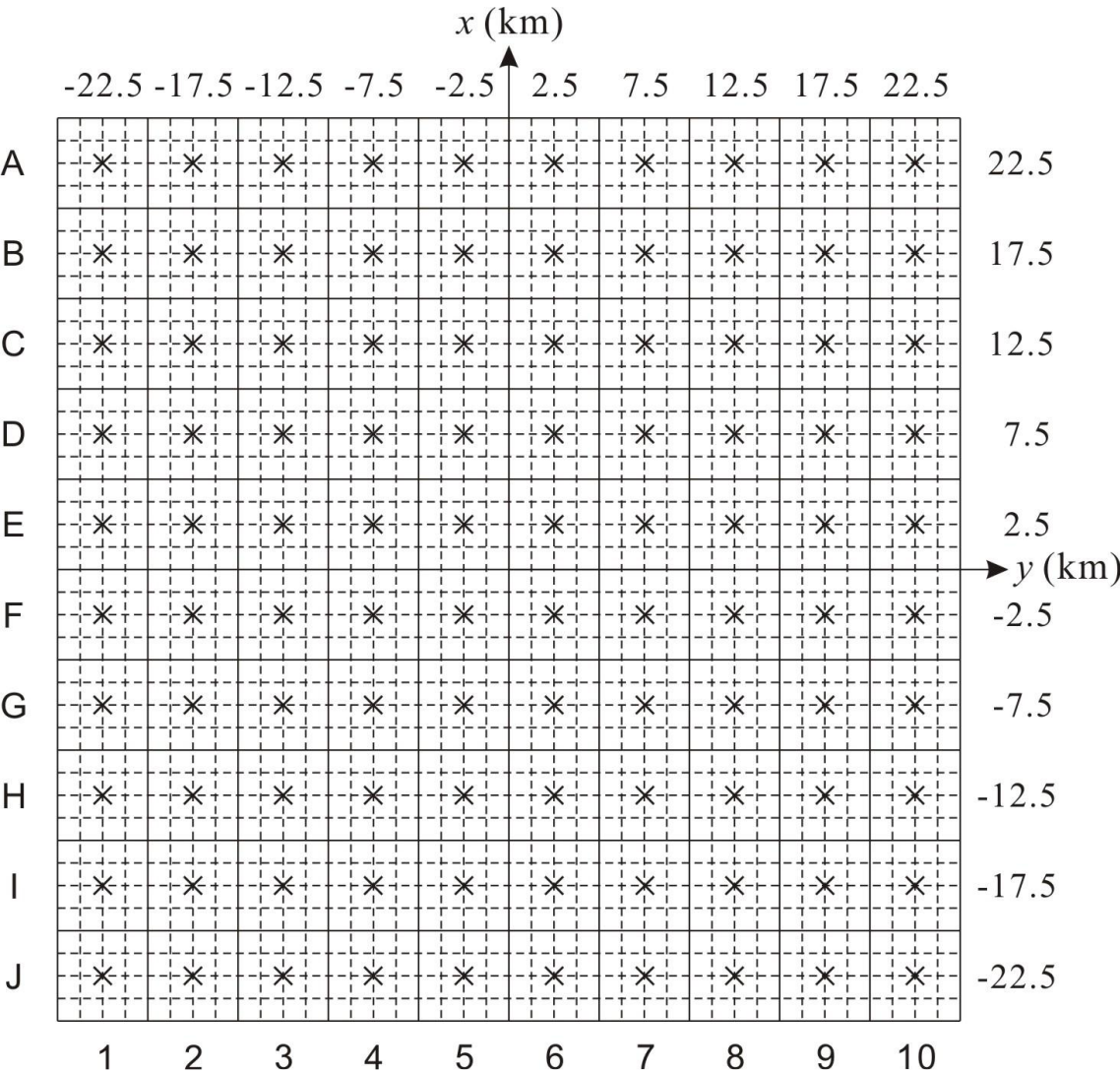
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Inversion parameters I

- Inversion code: Sasaki (2004)
 - Finite difference method
 - Input data: apparent resistivities and phases in Z_{xy} and Z_{yx} modes
- Data for inversion
 - No. of receivers: $10 \times 10 = 100$
 - No. of periods: 18 (0.56 ~ 10,000 s)
 - No. of data: 100 sites \times 18 periods \times 4 components = 7,200
- Background medium
 - 70 ohm-m homogeneous half-space
- Parameters
 - Weight of phase to apparent resistivity: 0.035
 - No static shift

Modeling and Inversion meshes

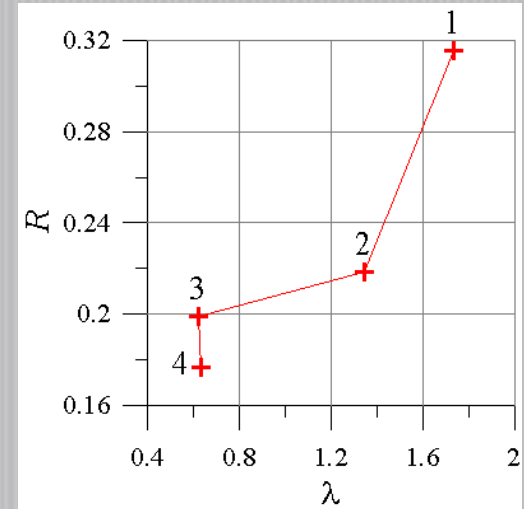
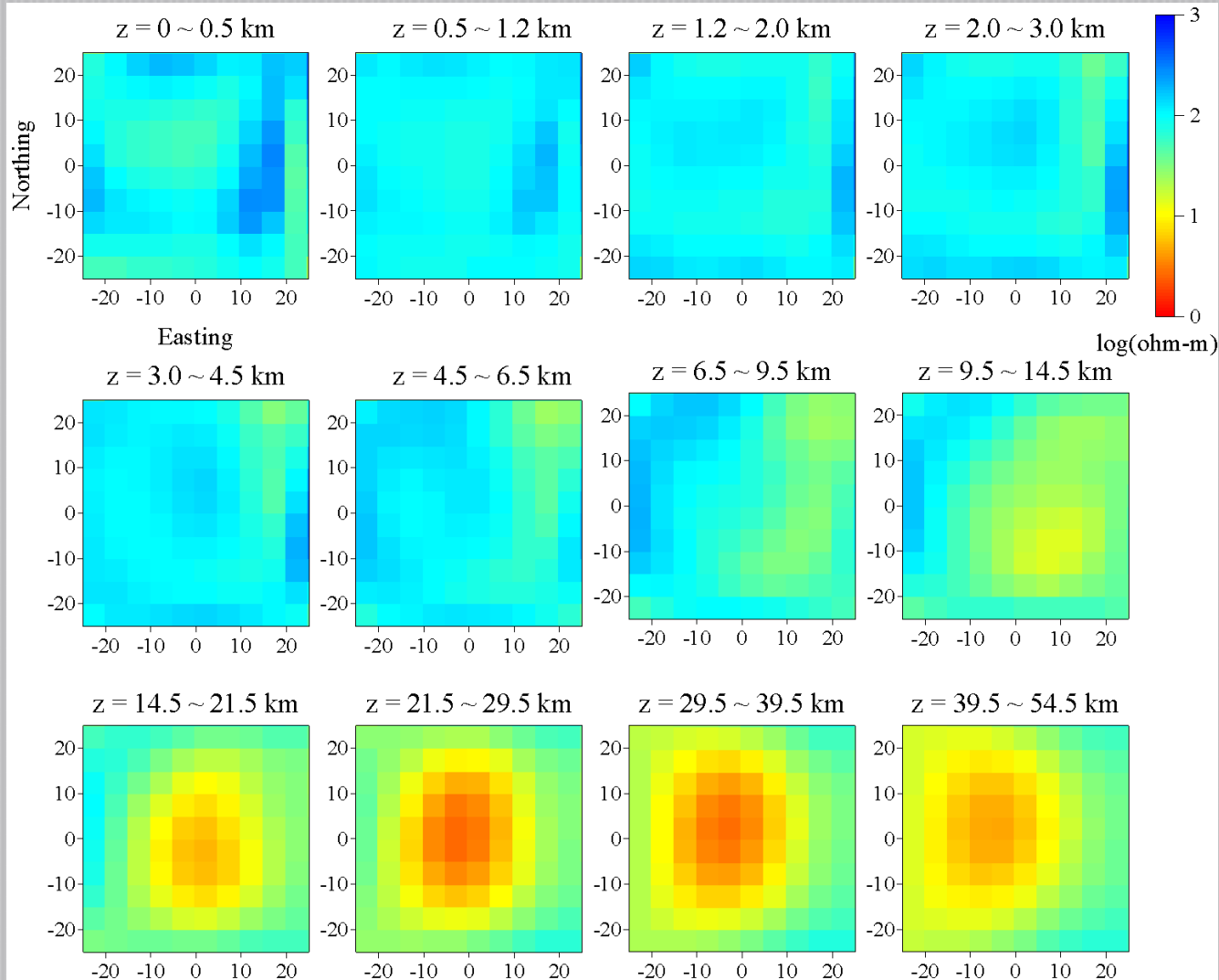


- **Modeling:**
 - dashed & dashed lines
 - 56x56x31 (including 10 air layers)
 - The smallest mesh size
 - Horizontal: 1.25 km
 - Vertical: 0.5 km
- **Inversion: solid lines**
 - 14x14x14

Inversion parameters II

- Number of iterations: 4
- Sensitivities
 - Start with initial sensitivities for a homogeneous half-space
 - Calculate exact sensitivities at the third iteration
 - Utilize approximate sensitivities at the second and fourth iterations
- Computation time
 - 141,649 seconds (39: 20: 49)
 - IBM PowerPC970 2.2 GHz

Reconstructed images



- *rms* misfit
- Initial: 50.9%
- Final: 17.69%

Data fits

