is not resolvable as described in Yin (2003) due to the nature of plane wave.

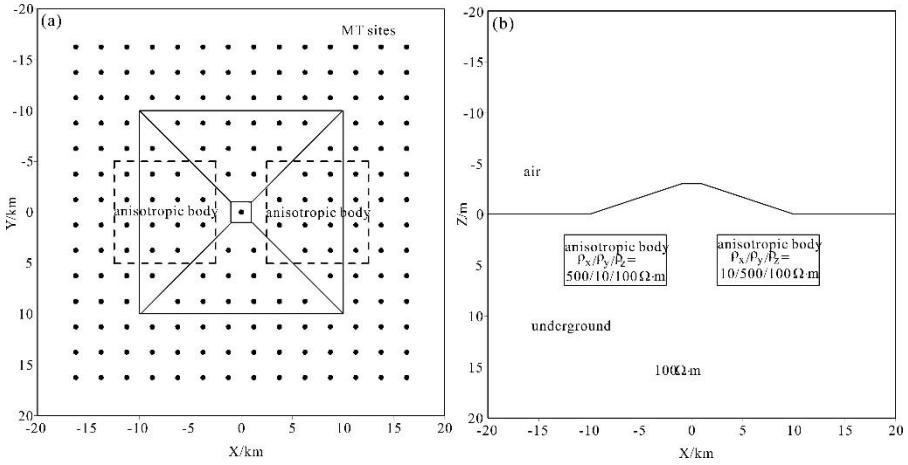

Figure.1 Schematic display of the synthetic model. (a) Plane view; (b) Section view

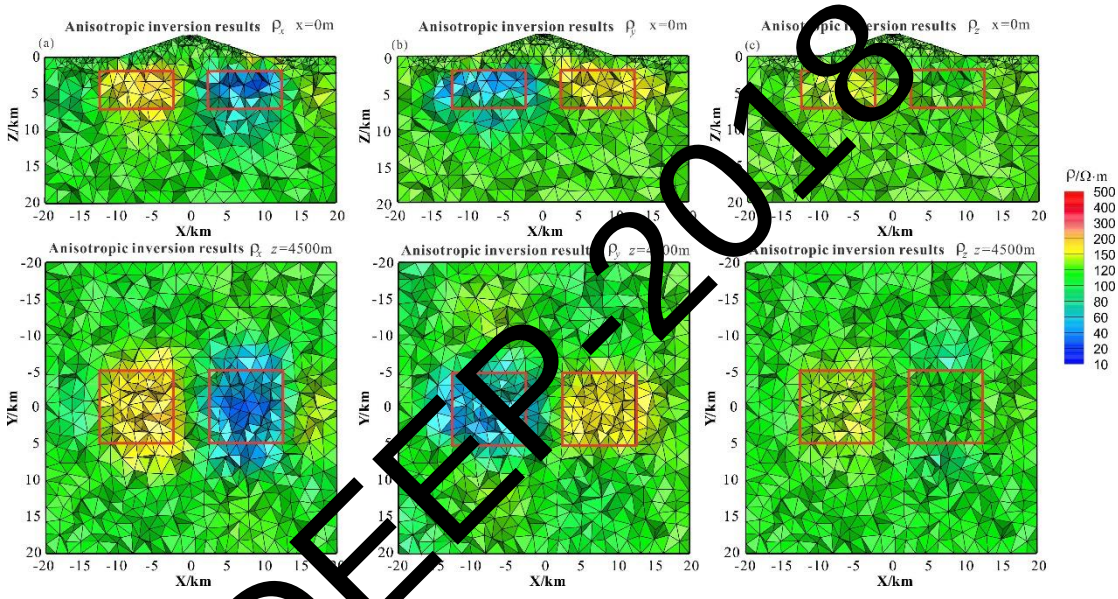

Figure.2 The anisotropic inversion results of the synthetic model. (a) and (b) Principle resistivity ρ_x at xz- and xy-section; (c) and (d) Principle resistivity ρ_y at xz- and xy-section; (e) and (f) Principle resistivity ρ_z at xz- and xy-section.

Conclusions

Numerical experiments show that unstructured finite-element method with L-BFGS method can efficiently invert 3D MT data with topography directly without additional correction. MT inversions for an anisotropic earth can resolve the resistivities in the horizontal principal axis directions, however the resistivity in the vertical direction is non-resolvable.

Reference

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