



## 2D multicomponent adaptive focused beam migration

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Gaussian beam migration based on ray theory is an imaging method with both computational efficiency, imaging accuracy and flexibility. However, the initial width of Gaussian beam has a great impact on the imaging quality.

The adaptive focused beam developed on the basis of Gaussian beam can adaptively change according to the local velocity field in the propagation process and has a small beam width on the whole central ray, which makes it able to adapt to the strong lateral velocity variation region and improve the imaging quality of complex structure region.

In this paper, we extend Wang(2015)'s method to multicomponent seismic data and present a multicomponent adaptive focused beam migration by modifying the propagator of Gaussian beam. According to Cerveny and Psencik(1983a,1983b,1984),we derive the adaptive focused beam formulas for elastic media. Then we use adaptive focused beam of elastic media to calculate the Green's function and the Claerbout's imaging condition to obtain images. This media can focus the reflected energy accurately, enhance the amplitude of middle and deep layers, improve the signal-to-noise ratio, and make the migration results clean and clear.

The model test verifies the correctness and adaptability of the method in this paper.