# High-Res Azimuthal Analysis

Azimuthal information of the subsurface are crucial to understand stress regimes, pore pressures and reservoir characteristics.
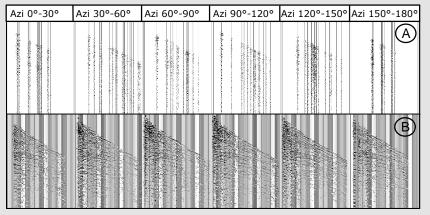


Fig.1: CDP Gathers subdivided into 6 azimuth classes (A) and CRS Gathers of same location (B).

Azimuthal Gathers are helpful for a detailed analysis of the reservoir. The amount of azimuth classes is linked to the acquisition geometry. However, even poorly populated azimuth range is improved by applying azimuthal CRS processing (Fig. 1).

Subsequently the azimuthal CRS Gathers are migrated for further analysis.

Azimuthal Prestack Time Migrations (PreSTM) of several azimuth classes reveal small scale features. CRS regularizes any wide azimuth data to offset/azimuth classes. Depending on the acquisition geometry, up to 18 azimuth classes (Fig 2). Depending on the acquisition geometry CRS regularizes any wide azimuth data to offset azimuth classes.
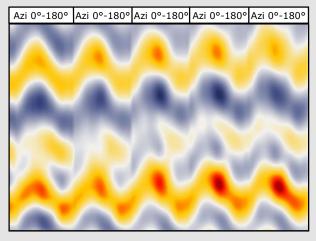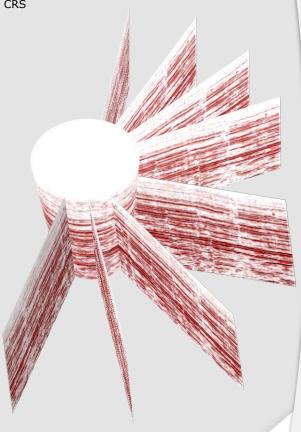


Fig.2: Azimuthal Prestack Time Migrations of single Inline.



Fig.3: Snail Gathers at constant offset for five CDPs.

Snail CRS Gathers are sorted to azimuth/offset and show undulations, depending on the azimuthal direction (Fig.3). The undulations may refer to velocity variations of the corresponding azimuth. The use of snail gathers reveal amplitude variations depending on the direction and, thus, can lead to a detailed reservoir characterization.

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