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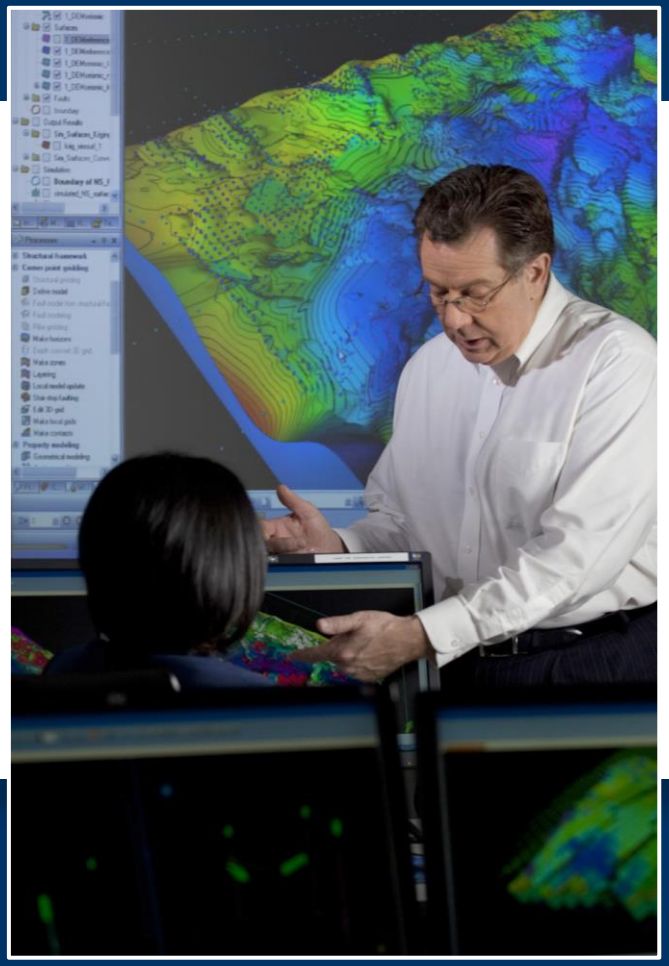
# Petrel Geophysics Module 11: Horizon interpretation

# Lesson 1: Horizon interpretation in Petrel







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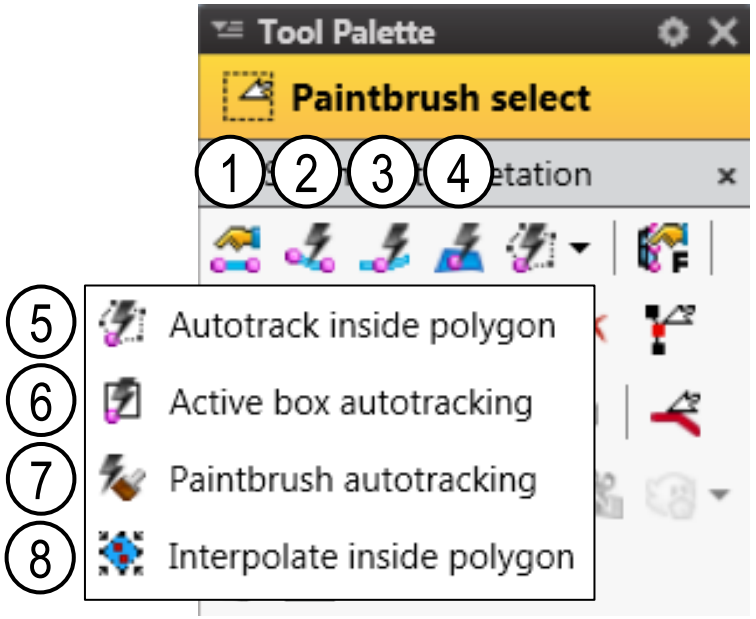
# Horizon interpretation techniques

Horizon interpretation is a combination of many techniques that include manual and automated interpretations.

1 Manual Interpretation
2 Guided autotracking
3 Seeded 2D autotracking
4 Seeded 3D autotracking
5 Autotrack inside polygon
6 Active box autotracking
7 Paintbrush autotracking
8 Interpolate inside polygon







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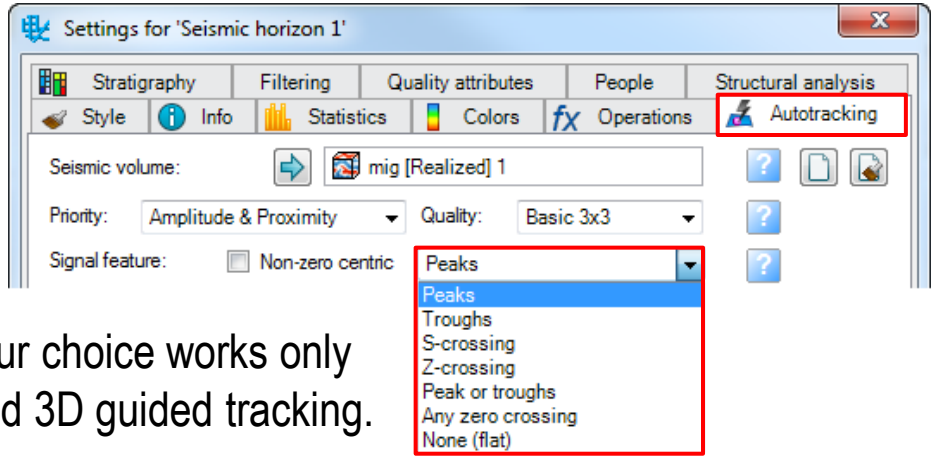
# Interpret manually a seismic horizon (1)

1. Open an **Interpretation** window and display a seismic section.
2. Right-click the seismic section and click *New seismic horizon*  in the mini toolbar.
3. Select the signal feature to track:
   a. Right-click the seismic horizon in the **Input** pane.
   b. Open **Settings** and click the **Autotracking** tab.
   c. Select one of the options from the list.




**Note:** Your choice works only for 2D and 3D guided tracking.







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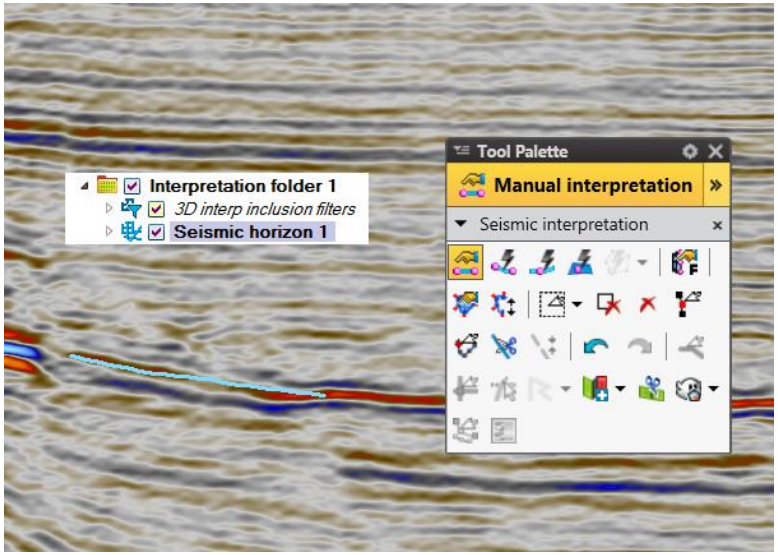
# Interpret manually a seismic horizon (2)

4. Click **Seismic Interpretation Tool Palette** in the mini toolbar.
5. Select manual interpretation.
6. Begin to digitize the seismic event on which you want to pick your horizon:
   a. Click to interpret the first point, move the cursor in the direction of interpretation and click again to make the 1st segment.
   b. Press N or double-click to break the pick.







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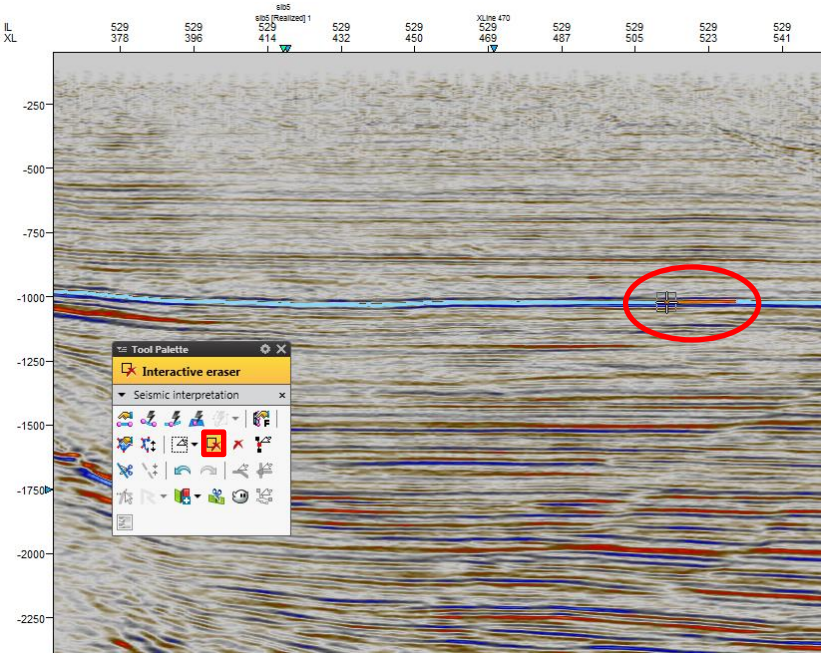
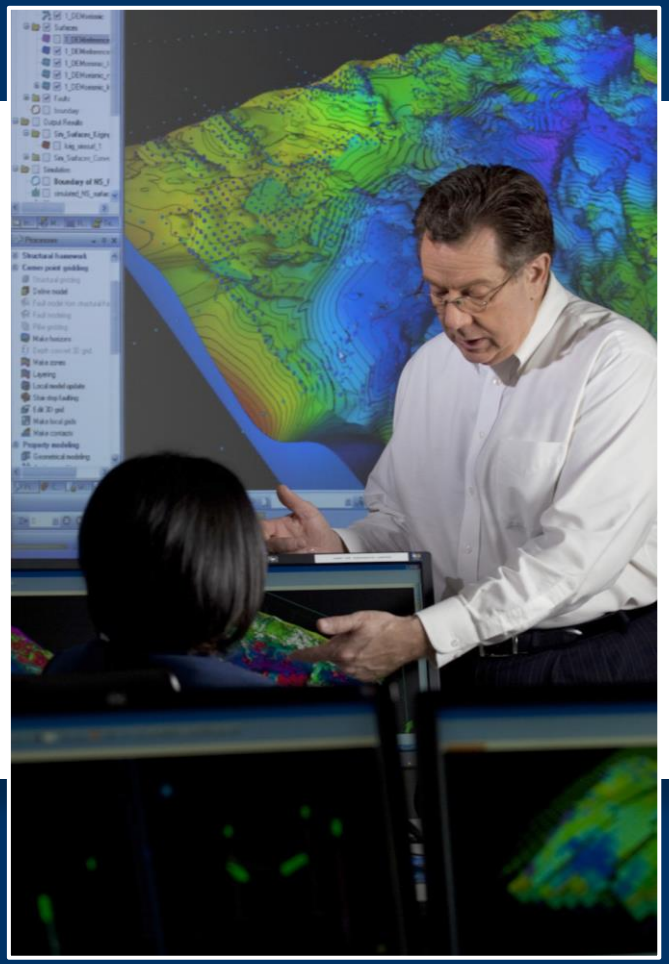
# Interpret manually a seismic horizon (3)

7. To erase all or part of the horizon on the seismic section, use *Interactive eraser*  in the **Seismic interpretation** tool pale



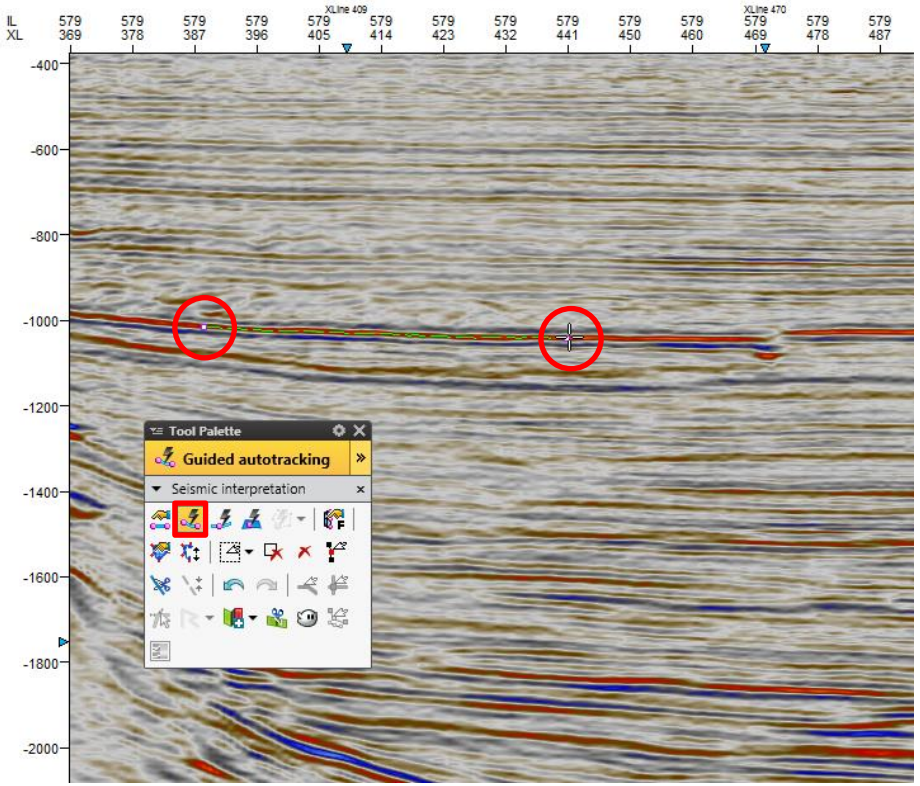
# Lesson 2: Autotracking



# Guided autotracking

1. On the **Seismic interpretation Tool Palette**, click *Guided autotracking*.
2. Click along a reflector to select the start and end points.

   The interpretation follows the seismic event between the two seed points.
3. Double-click or press N to end an interpretation segment to break the pick.







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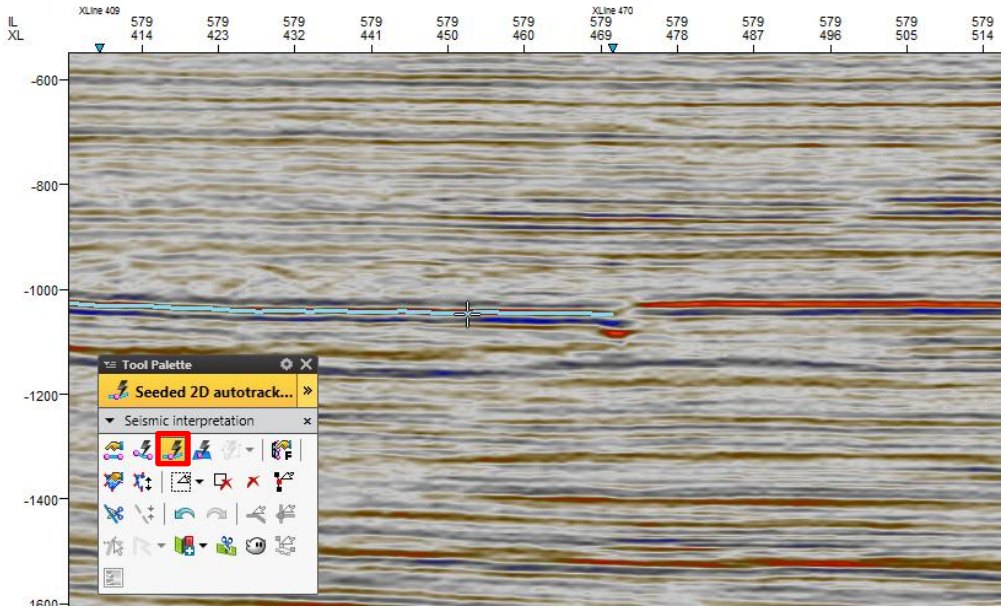
# Seeded 2D autotracking

1. Click once along a seismic event. The interpretation follows the event to each side of the selected point and stops when an abrupt change in an amplitude value occurs (or parameters are no longer met).

2. Repeat the procedure for the segment across the fault and other lines.







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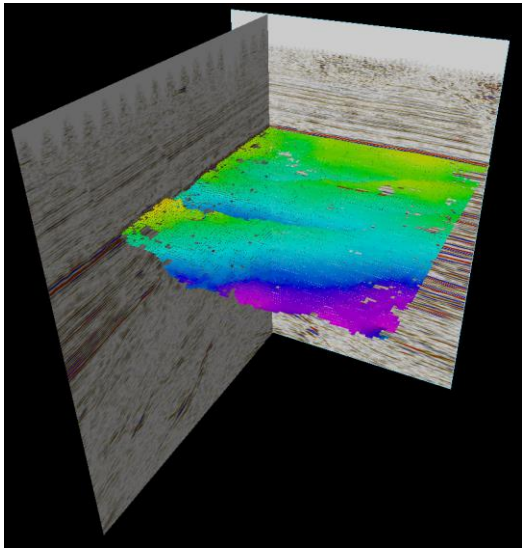
# Seeded 3D autotracking

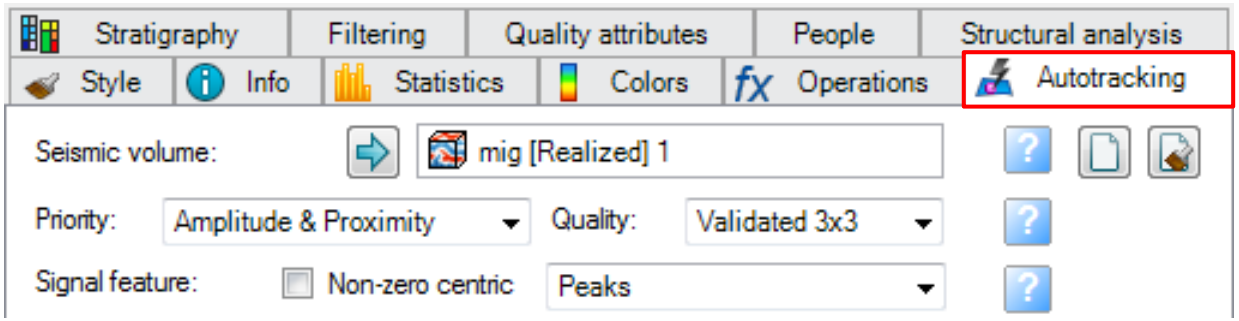
- Works only for 3D seismic data. Real control for Seeded 3D autotracking comes from options on the **Autotracking** tab in the horizon **Settings** dialog box.
- These options allow you to pick horizons that require minimum quality control from the interpreter.
- Choose one or several seed points and the horizon is tracked outward in all directions from these seed points.
- When the reflectors are of good quality, this method is an efficient way of interpreting through the seismic cube.



# Autotracking tab: General section

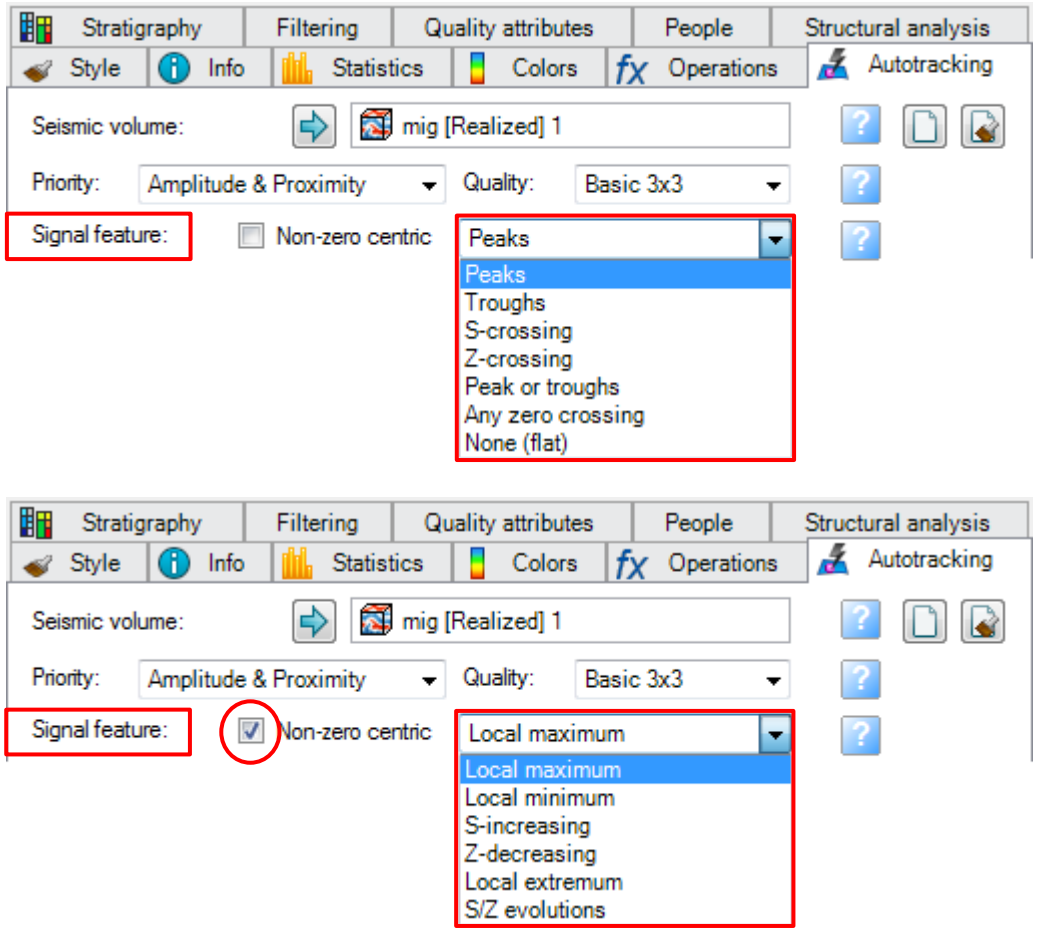
The General area on the **Autotracking** tab allows you to select:

- Seismic volume (picked automatically)
- Priority
- Quality
- Seismic volume



# Autotracking tab: Signal feature (1)

*Signal feature* controls the feature to be tracked.







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# Exercise 2: Create a new interpretation, tag it and send it to Studio