Lab 6

Bharath Shekar
IIT Bombay
17/10/2018

Demultiple: FK transform

- Download the script "Velan_FK.sh" The script is similar to the velocity analysis script from last lab. However, the following modifications have been made:

    - 1st pass velocity analysis: <mark>pick intermediate velocities b/w primary and multiples.</mark> Then FK (or dip) filtering is applied to get rid of the multiples. Look at the script and understand the parameters. What is the logic behind it?

- Now with the picked intermediate velocity function, <mark>do dip filtering</mark> for all 100 CMPs to remove the multiples.

- <mark>Do velocity analysis</mark> on the demultipled CMPs and then stack the data

Demultiple: Radon transform

- Download the script "linear_radon_VG.sh" The script does the following:

  - NMO correction with water velocity. Now the first water bottom primary and the following multiples are flat.

  - Apply linear radon transform* to remove multiples, taking care that the first primary is not attenuated.

- Write a script that performs the demultiple in radon domain for the 100 CMP gathers, do velocity analysis, then stack the data. Is the stack any better?

* you may consult Pg. 157, Chapter 10 of John's notes to understand the implementation of the radon filter in SU

Demultiple: <mark>Radon transform</mark>
must know radon 1st!!!!!!!!!!!!!!!!

- Download the script "hyperbolic_radon_VG.sh" The script does the following:

    - NMO correction with water velocity. Now the first water bottom primary and the following multiples are flat.

    - Apply hyperbolic radon transform to remove multiples, taking care that the first primary is not attenuated.

- Write a script that performs the demultiple in hyperbolic radon domain for the 100 CMP gathers, do velocity analysis, then stack the data. Is the stack any better?

- Which radon transform worked better? Linear or hyperbolic?