

GeoEast解释-叠前AVA合成记录标定

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GeoEast



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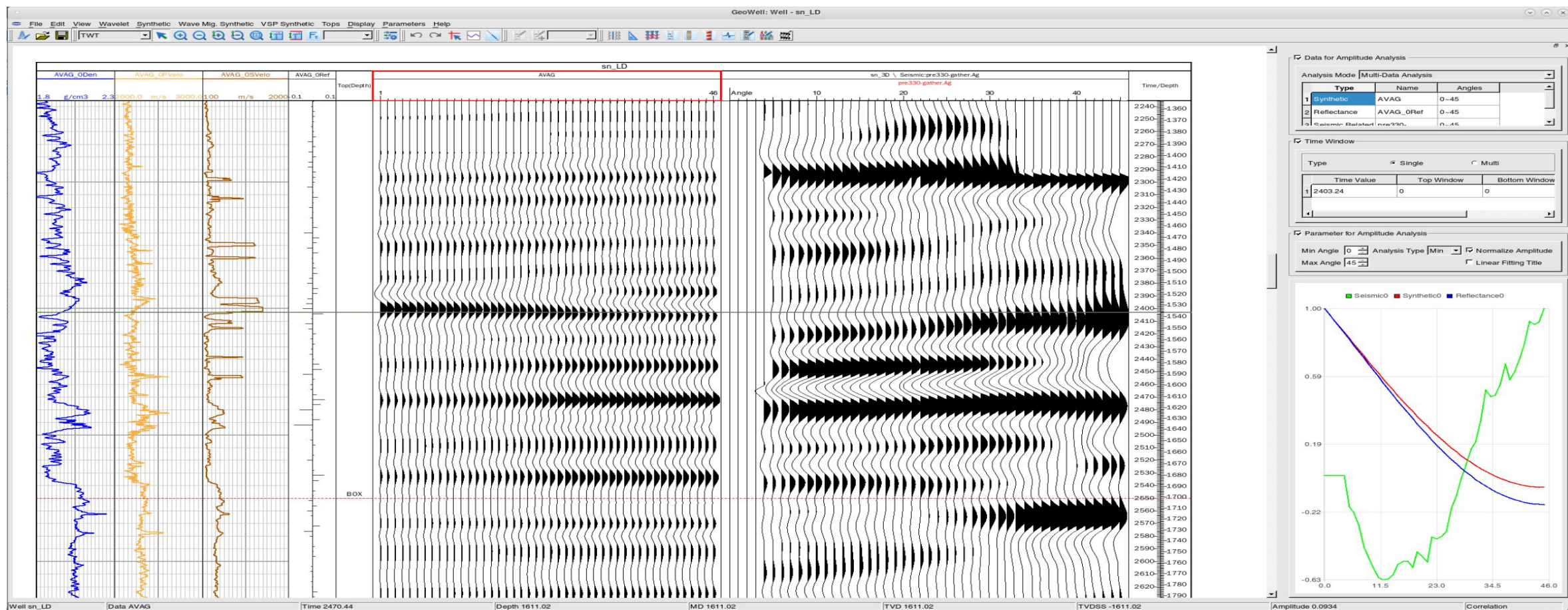
叠前AVA合成记录标定



一、叠前AVA合成记录标定概述

叠前AVA合成记录标定：通过井点纵波速度、横波速度、密度曲线，利用Zoepprits方程或者各种近似公式计算不同角度的反射系数，不同角度反射系数与子波褶积后得到不同角度对应的合成记录。

目的：研究井上及叠前地震资料AVO性质，为叠前反演、叠前属性分析提供技术支撑。





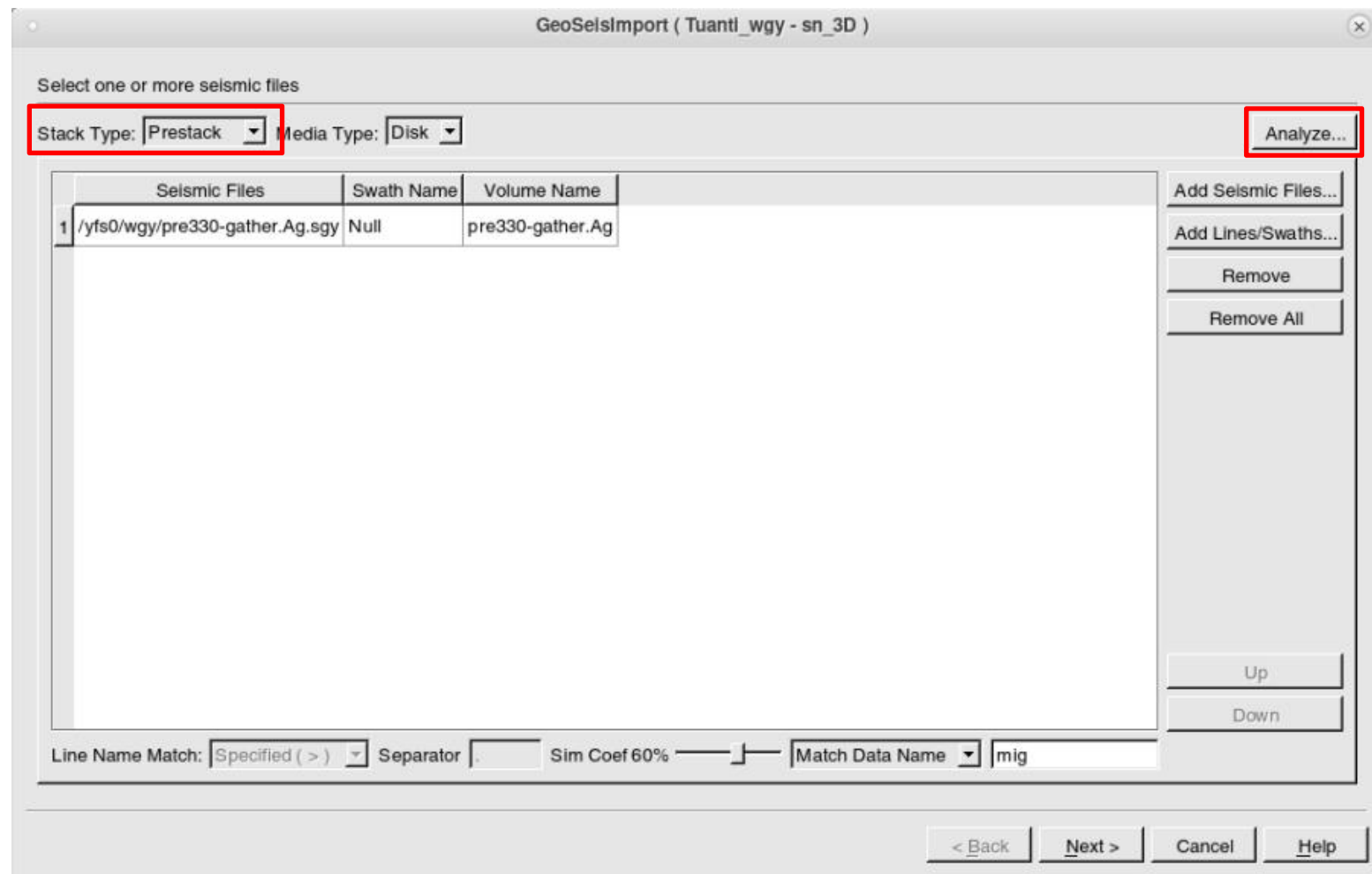
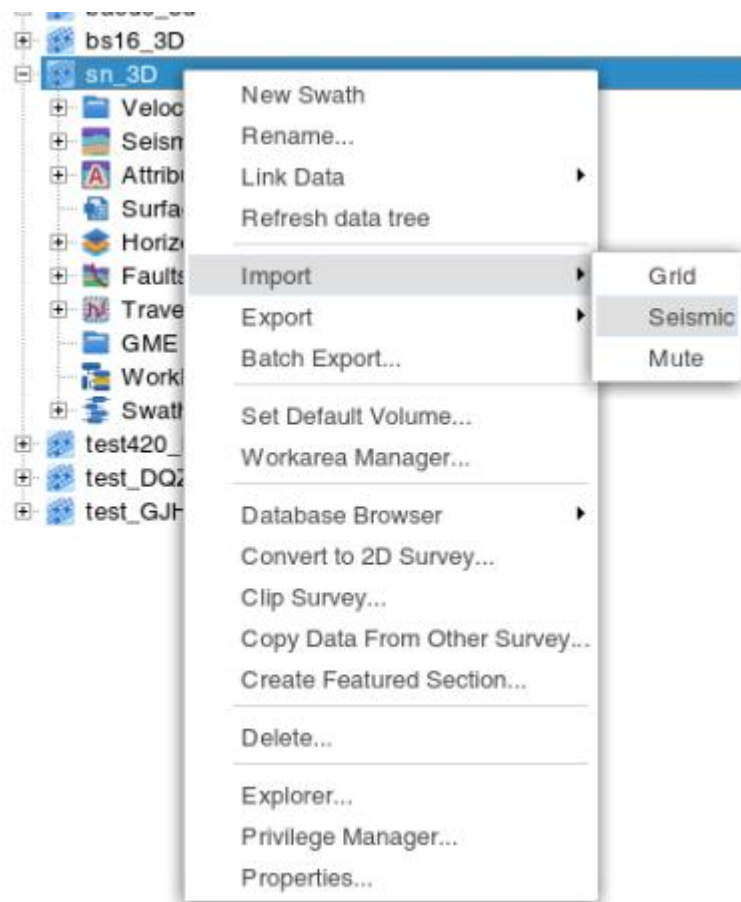
一、叠前AVA合成记录标定概述

数据准备:

- 建立项目、建立工区（地震基准面）、加载叠前角道集地震数据（可选）
- 加载井口坐标（KB）、井轨迹、AC（单位公制、无异常值）
- 创建子波



二、叠前角道集地震数据加载



工区右键菜单-Import-Seismic



二、叠前角道集地震数据加载



bs16_3D
sn_3D

- New Swath
- Rename...
- Link Data
- Refresh data tree
- Import
- Export
- Batch Export...
- Set Default Volume...
- Workarea Manager...
- Database Browser
- Convert to 2D Survey...
- Clip Survey...
- Copy Data From Other Survey...
- Create Featured Section...
- Delete...
- Explorer...
- Privilege Manager...
- Properties...

GeoSeisAnalyse

Media Type: Disk File Name: /yfs0/wgy/pre330-gather.Ag.sgy Select...

Format Type: SEGY Format Template: [I]GeoSeis_Analyse_SEGY_StandardTemplate Select...

Byte Order: Big Endian Current is Big-Endian.

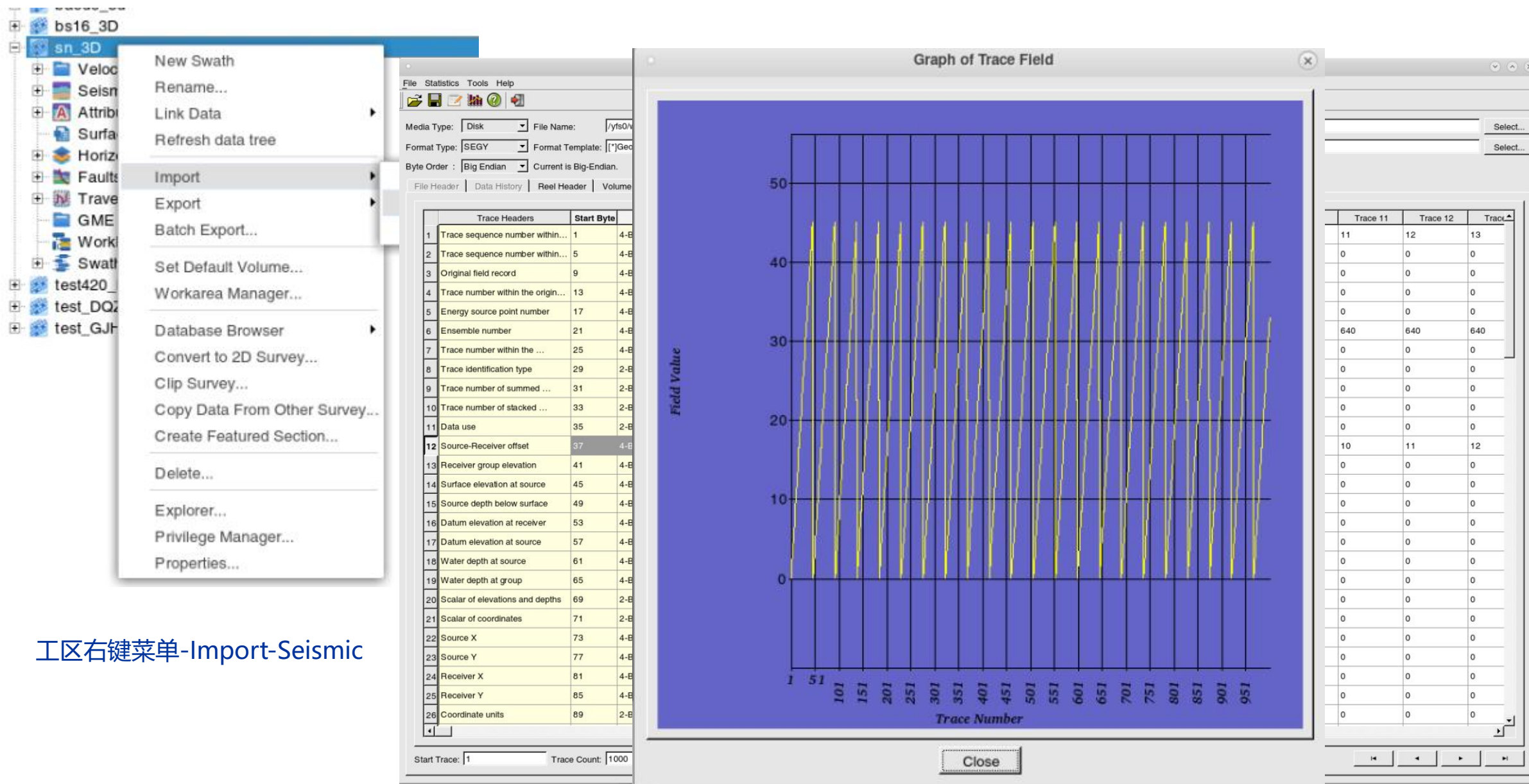
File Header Data History Reel Header Volume Header Trace Header Trace Data

	Trace Headers	Start Byte	Format	Trace 1	Trace 2	Trace 3	Trace 4	Trace 5	Trace 6	Trace 7	Trace 8	Trace 9	Trace 10	Trace 11	Trace 12	Trace 13
1	Trace sequence number within...	1	4-Byte Integer	1	2	3	4	5	6	7	8	9	10	11	12	13
2	Trace sequence number within...	5	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Original field record	9	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Trace number within the origin...	13	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Energy source point number	17	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Ensemble number	21	4-Byte Integer	640	640	640	640	640	640	640	640	640	640	640	640	640
7	Trace number within the ...	25	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Trace identification type	29	2-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Trace number of summed ...	31	2-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Trace number of stacked ...	33	2-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Data use	35	2-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Source-Receiver offset	37	4-Byte Integer	0	1	2	3	4	5	6	7	8	9	10	11	12
13	Receiver group elevation	41	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Surface elevation at source	45	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Source depth below surface	49	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Datum elevation at receiver	53	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Datum elevation at source	57	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Water depth at source	61	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Water depth at group	65	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Scalar of elevations and depths	69	2-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Scalar of coordinates	71	2-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Source X	73	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Source Y	77	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Receiver X	81	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Receiver Y	85	4-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Coordinate units	89	2-Byte Integer	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Trace: 1 Trace Count: 1000 Increment: 1

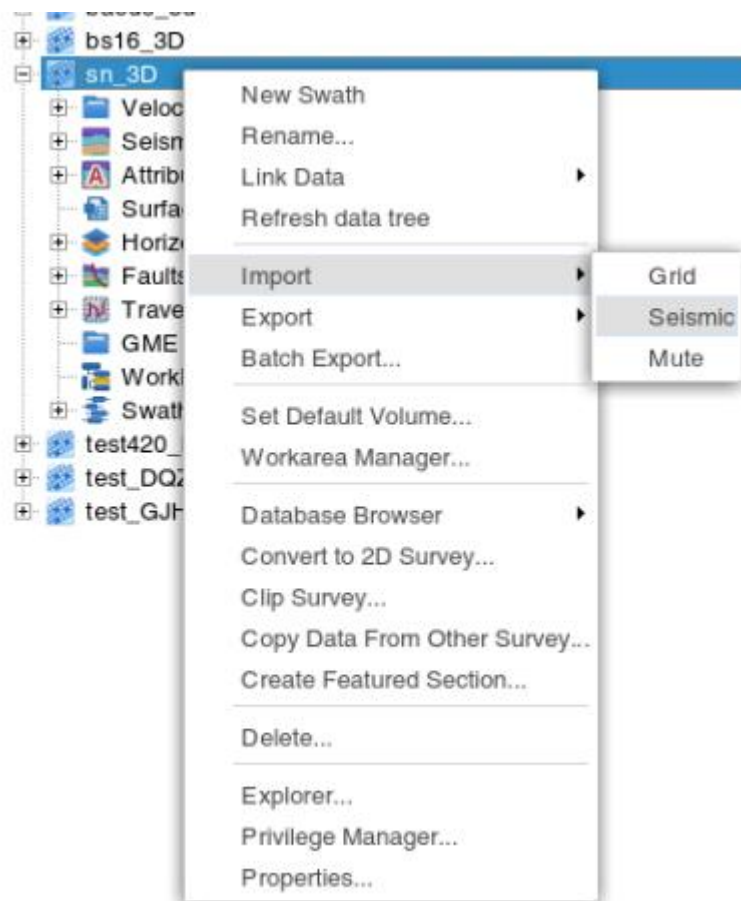
Trace Header Display

工区右键菜单-Import-Seismic

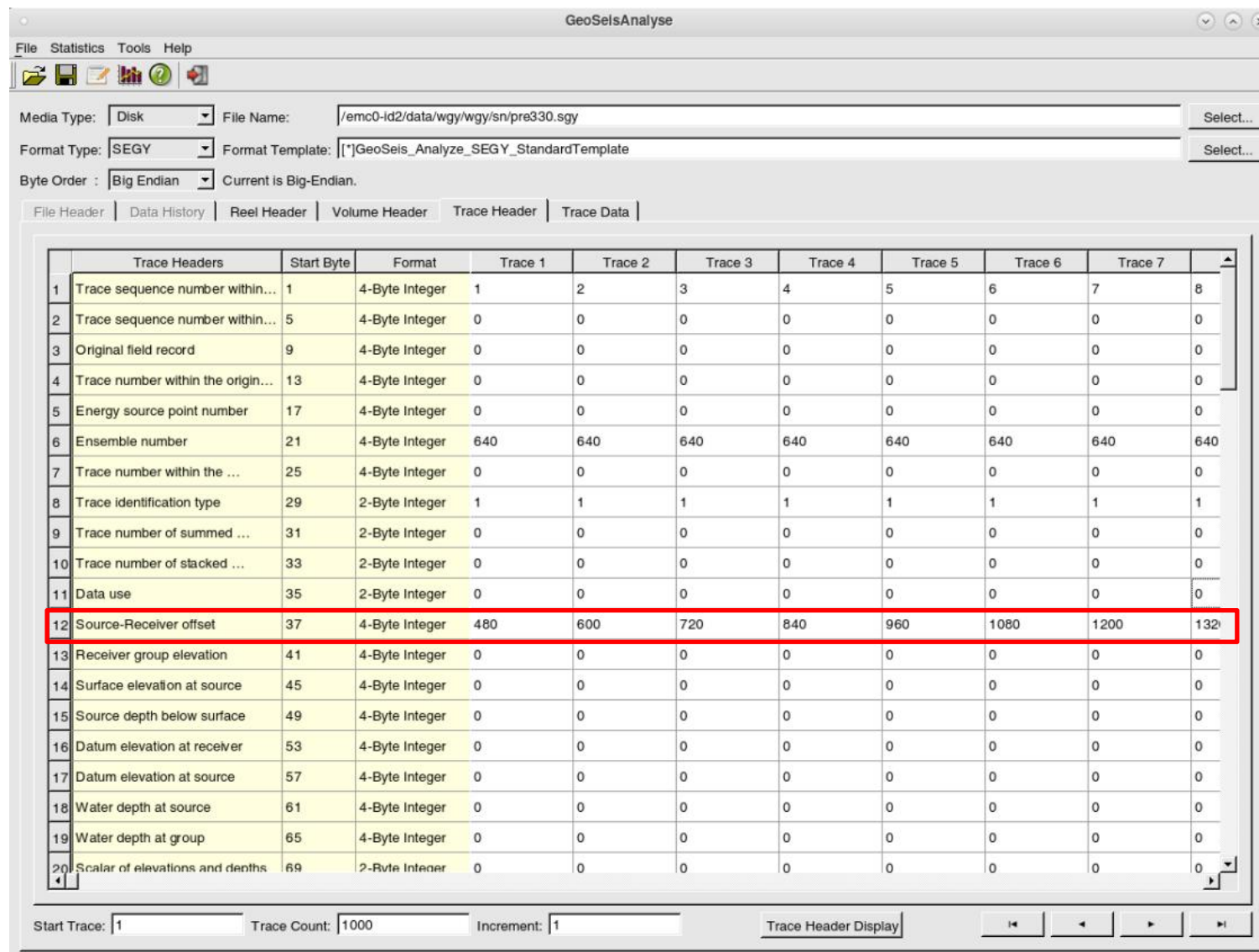




二、叠前角道集地震数据加载

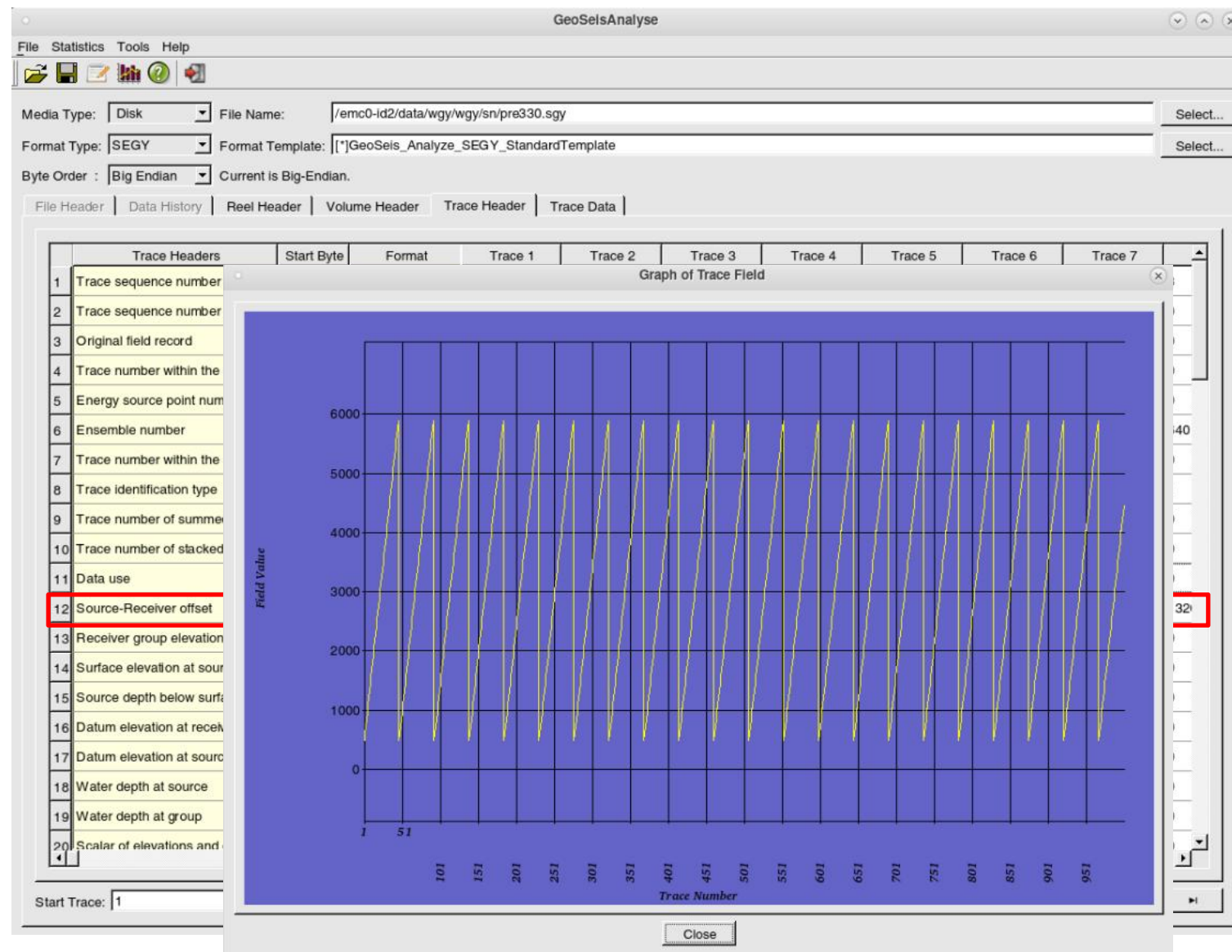
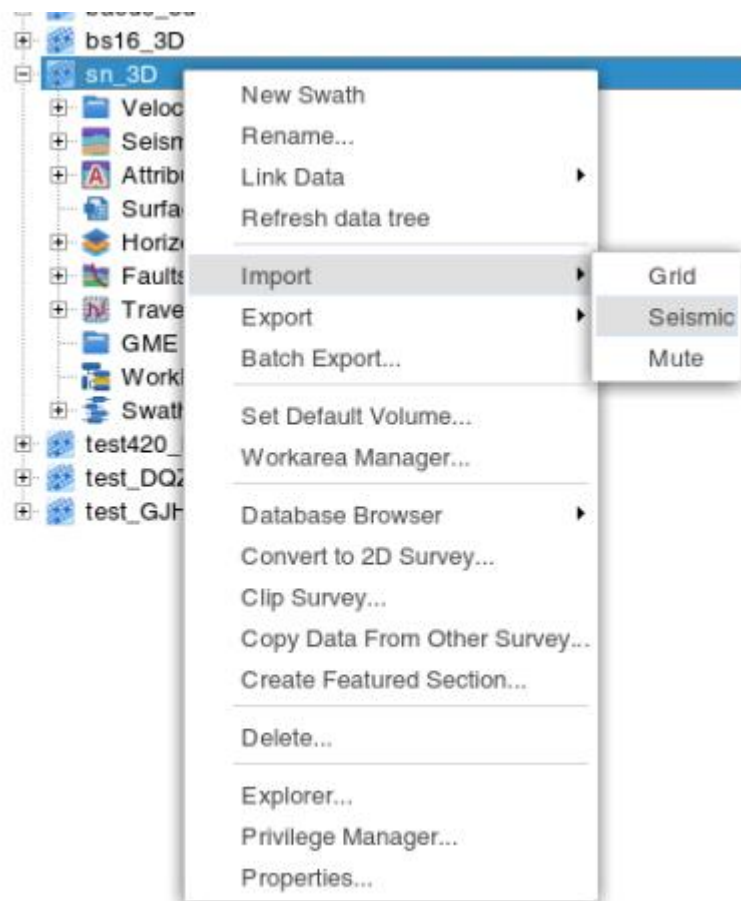


工区右键菜单-Import-Seismic





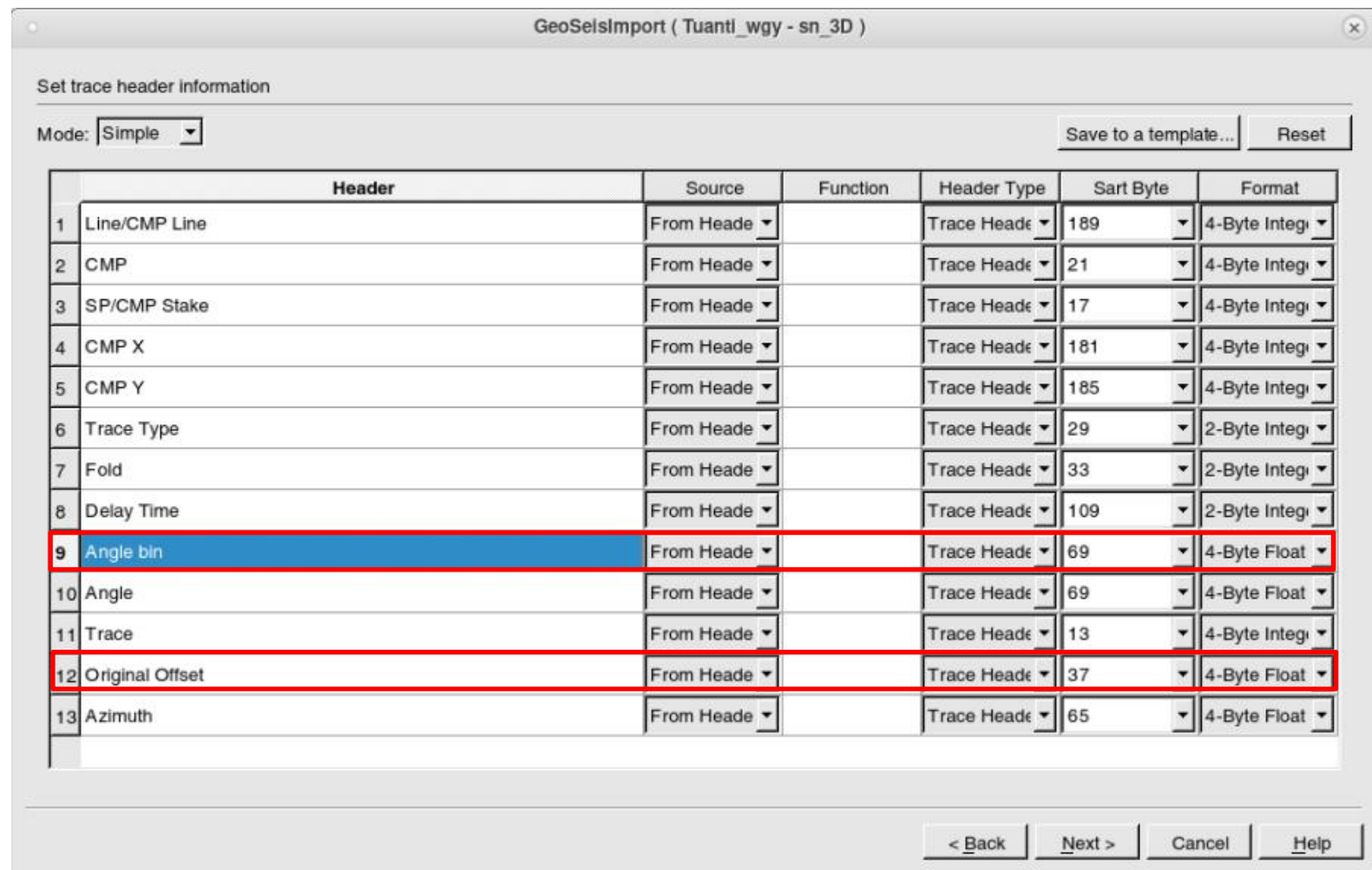
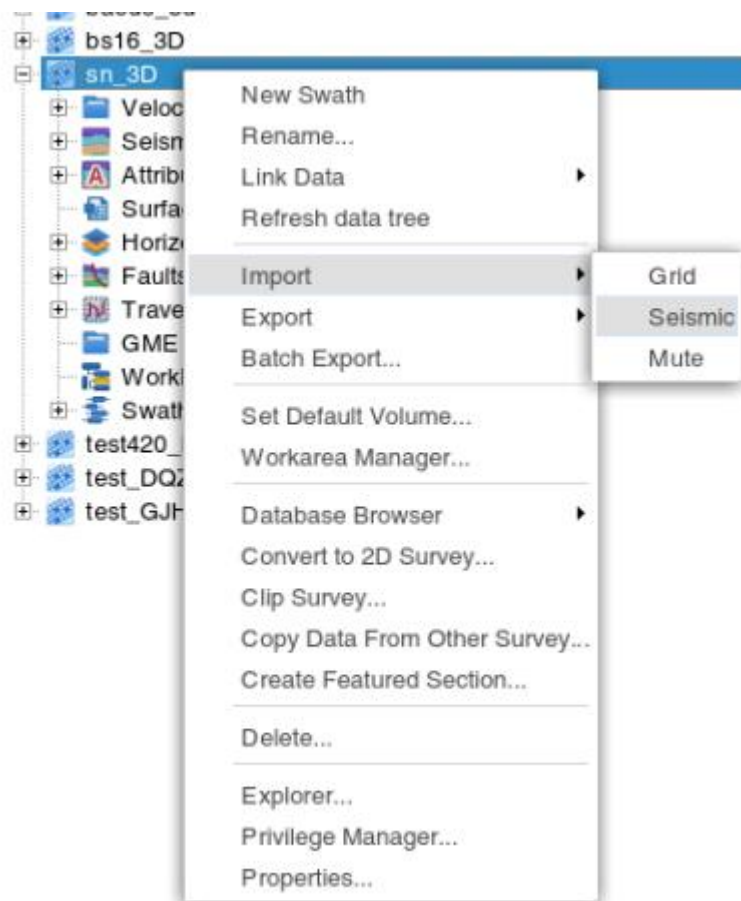
二、叠前角道集地震数据加载



工区右键菜单-Import-Seismic



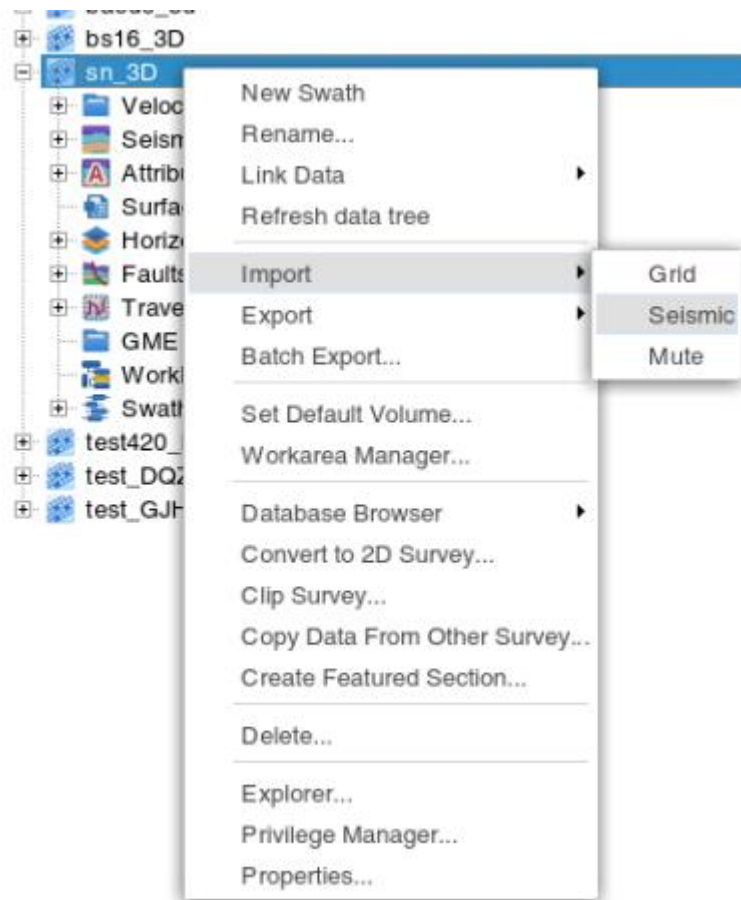
二、叠前角道集地震数据加载



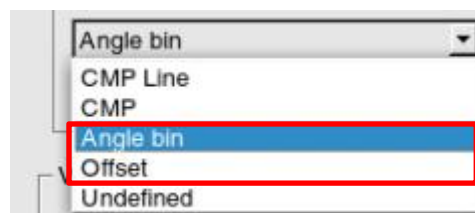
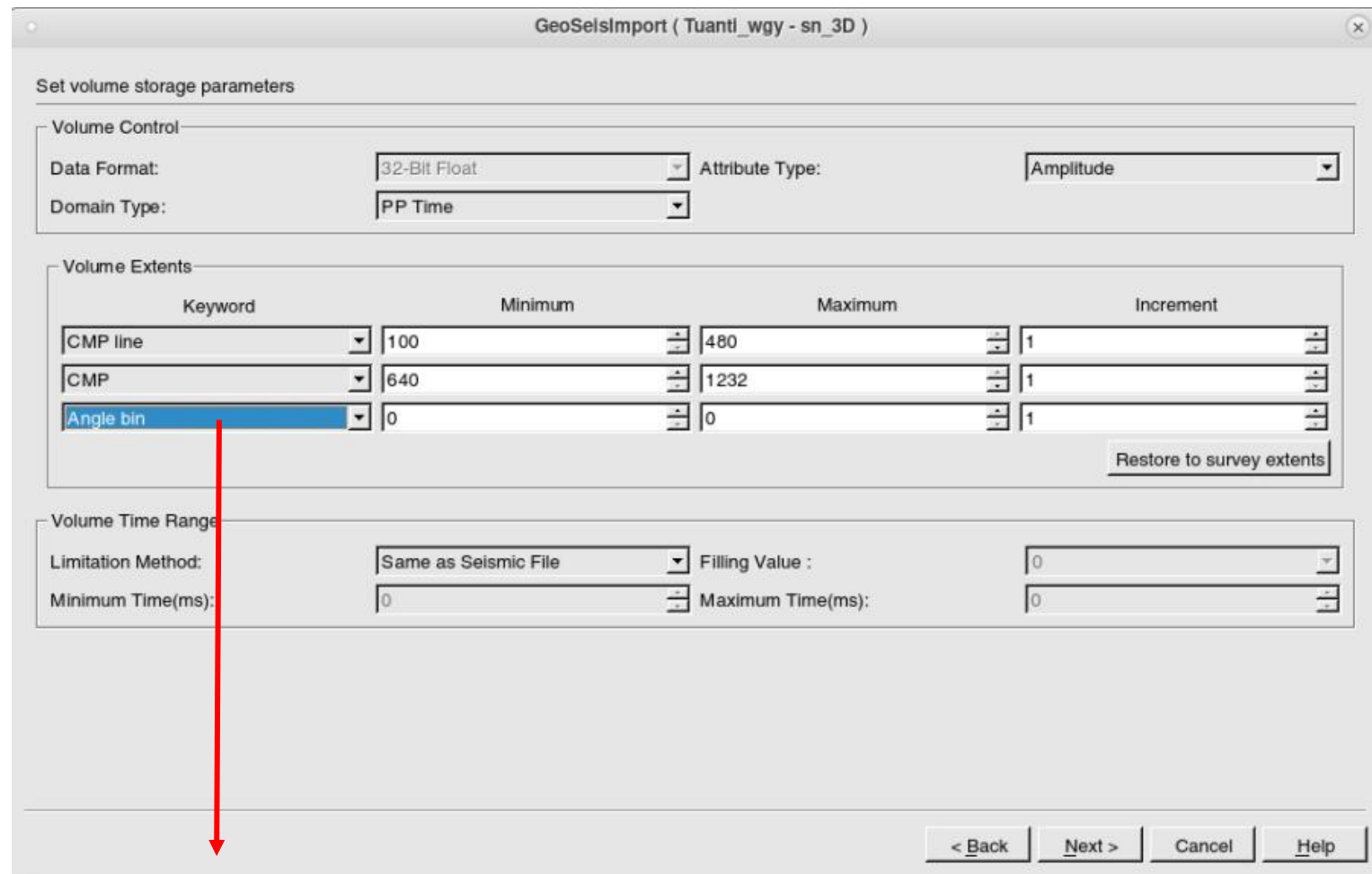
工区右键菜单-Import-Seismic



二、叠前角道集地震数据加载



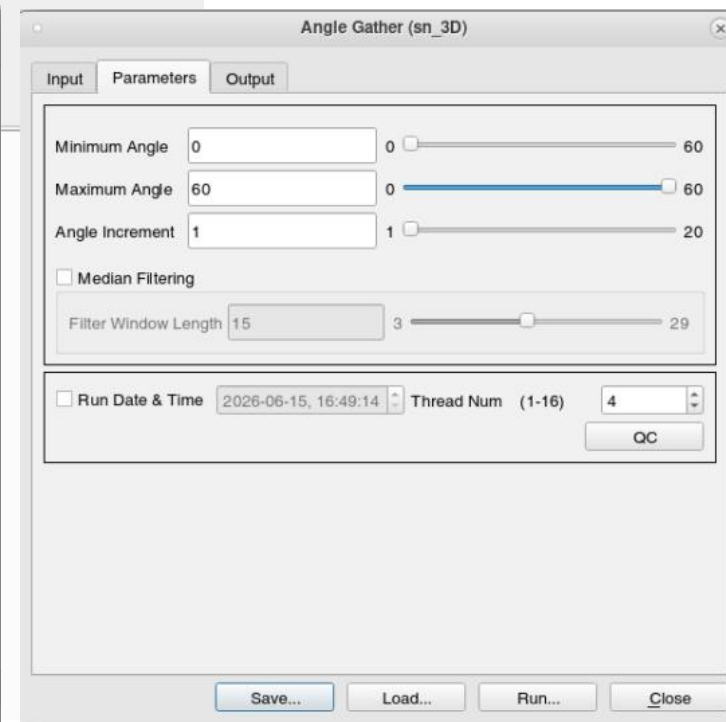
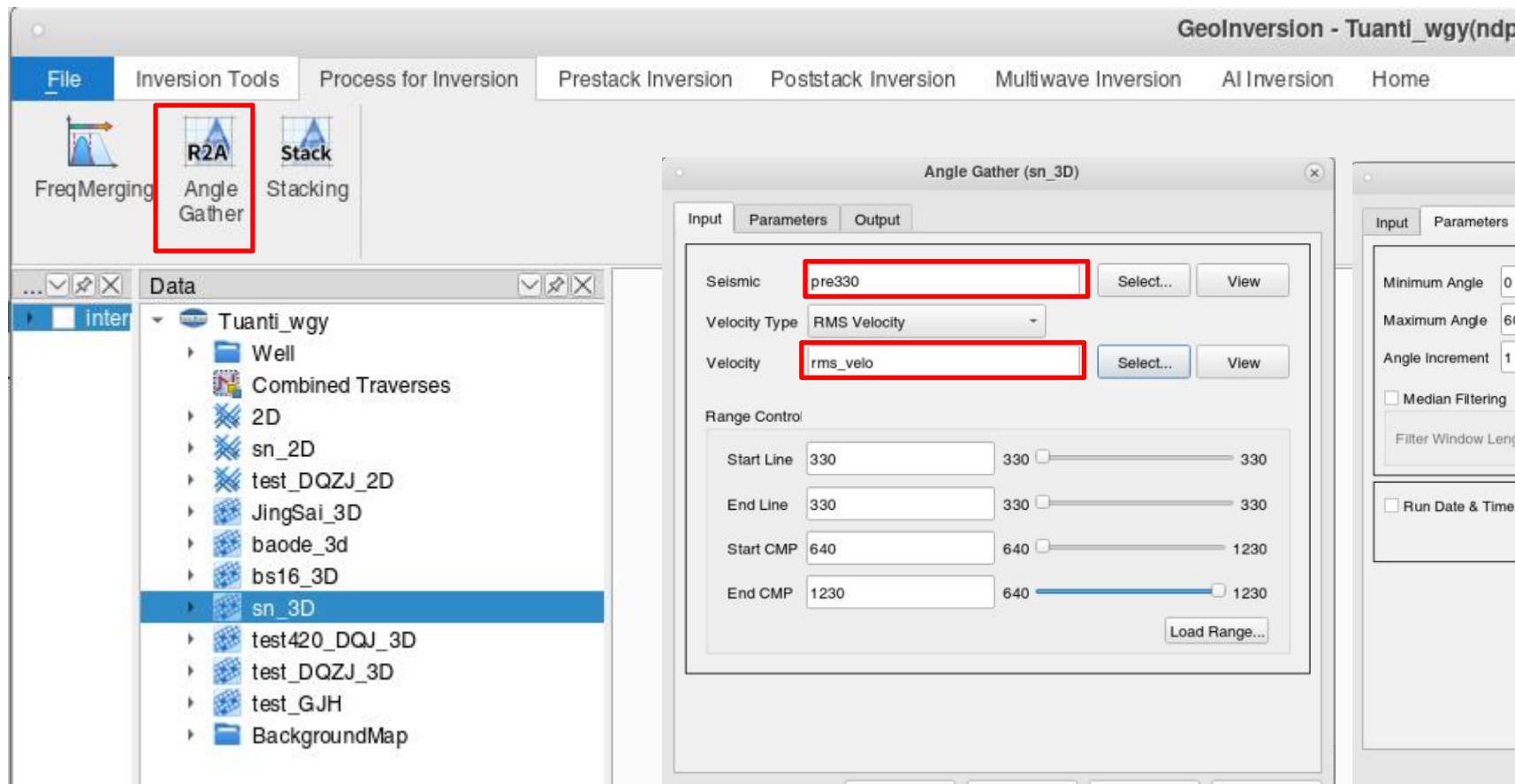
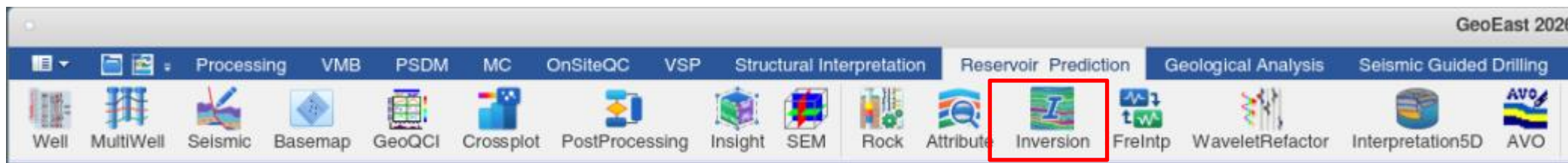
工区右键菜单-Import-Seismic



角道集
偏移距



二、叠前角道集地震数据加载

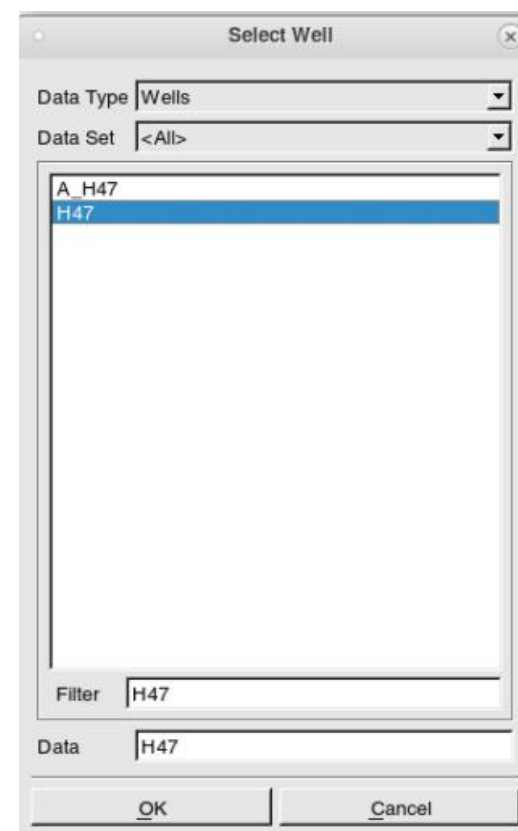
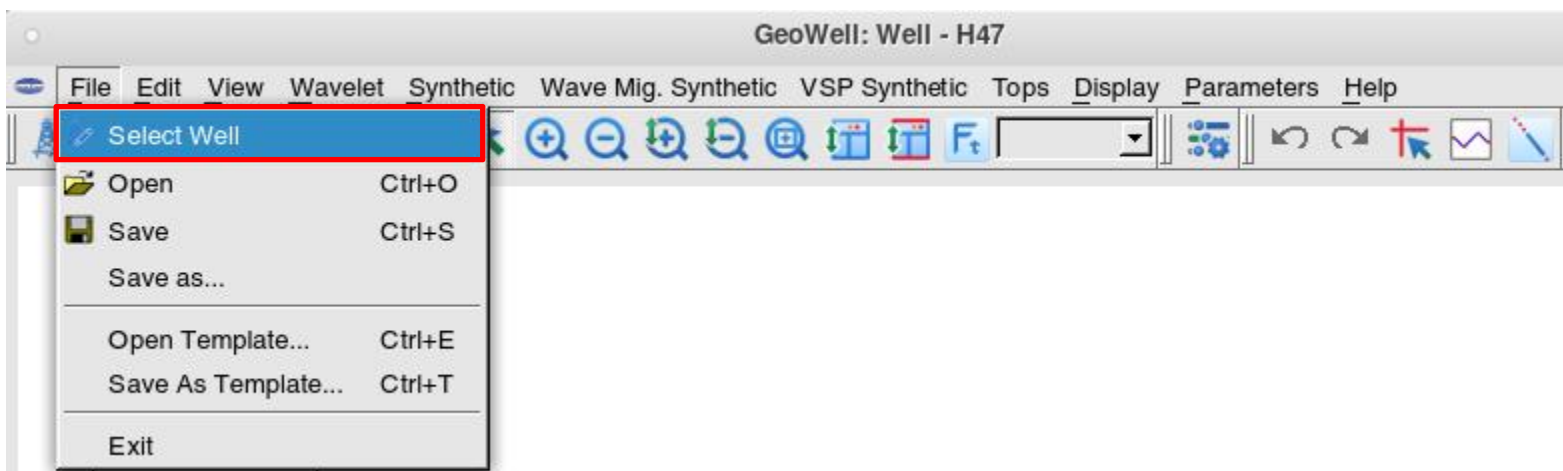




三、叠前AVA合成记录标定



启动:





三、叠前AVA合成记录标定

GeoWell: Well - sn_LD

Synthetic Wave Mig. Synthetic

Normal Synthetic...

El...

El-gather...

AVA ...

AVA-gather...

Converted Wave Synthetic...

Anisotropy Synthetic...

Customize T-D Relation...

Extend T-D Conversion

Correlation...

Save Depth Synthetic...

Create AVA-gather Synthetic

Select Method: Zoepprits

Method Name: Zoepprits

☒ Select Seismic

Survey Name: sn_3D Datum: 0 m

Parameter

☒ Den Curve ☐ Formula ☐ Const

Insert Angle Inc: 1 Delete

	SeismicName	Angle	Wavelet	P_VELO	S_VELO	DEN
2	pre330-gather.Ag	1	rick35	P_VEL_1	S_VEL_1	DEN_1
3	pre330-gather.Ag	2	rick35	P_VEL_1	S_VEL_1	DEN_1
4	pre330-gather.Ag	3	rick35	P_VEL_1	S_VEL_1	DEN_1
5	pre330-gather.Ag	4	rick35	P_VEL_1	S_VEL_1	DEN_1

Process Common Depth

Start TVD Depth: 1120.200 End TVD Depth: 2983.825 Common Depth (1120.200~2983.825)

Select D-T

☒ AC P_AC_1 Start Velo: 2000

☐ D-T

Save Synthetic

Prefix Name: AVAG

OK Apply Cancel

选择叠前角道集地震数据，工区Datum自动读入

Create AVA-gather Synthetic

Select Method: Zoepprits

Method Name: Zoepprits

☐ Select Seismic

Survey Name: sn_3D Datum: 0 m

Parameter

☒ Den Curve ☐ Formula ☐ Const

Insert Angle Inc: 1 Delete

	Angle	Wavelet	P_VELO	S_VELO	DEN
42	42	W128synA...	AVAG_0P...	AVAG_1S...	AVAG_0D...
43	43	W128synA...	AVAG_0P...	AVAG_1S...	AVAG_0D...
44	44	W128synA...	AVAG_0P...	AVAG_1S...	AVAG_0D...
45	45	W128synA...	AVAG_0P...	AVAG_1S...	AVAG_0D...

Process Common Depth

Start TVD Depth: 1120.200 End TVD Depth: 2983.825 Common Depth (1120.200~2983.825)

Select D-T

☒ AC P_AC_1 Start Velo: 2000

☐ D-T

Save Synthetic

Prefix Name: AVAG

OK Apply Cancel

不选择叠前角道集数据，需要手工输入Datum



三、叠前AVA合成记录标定

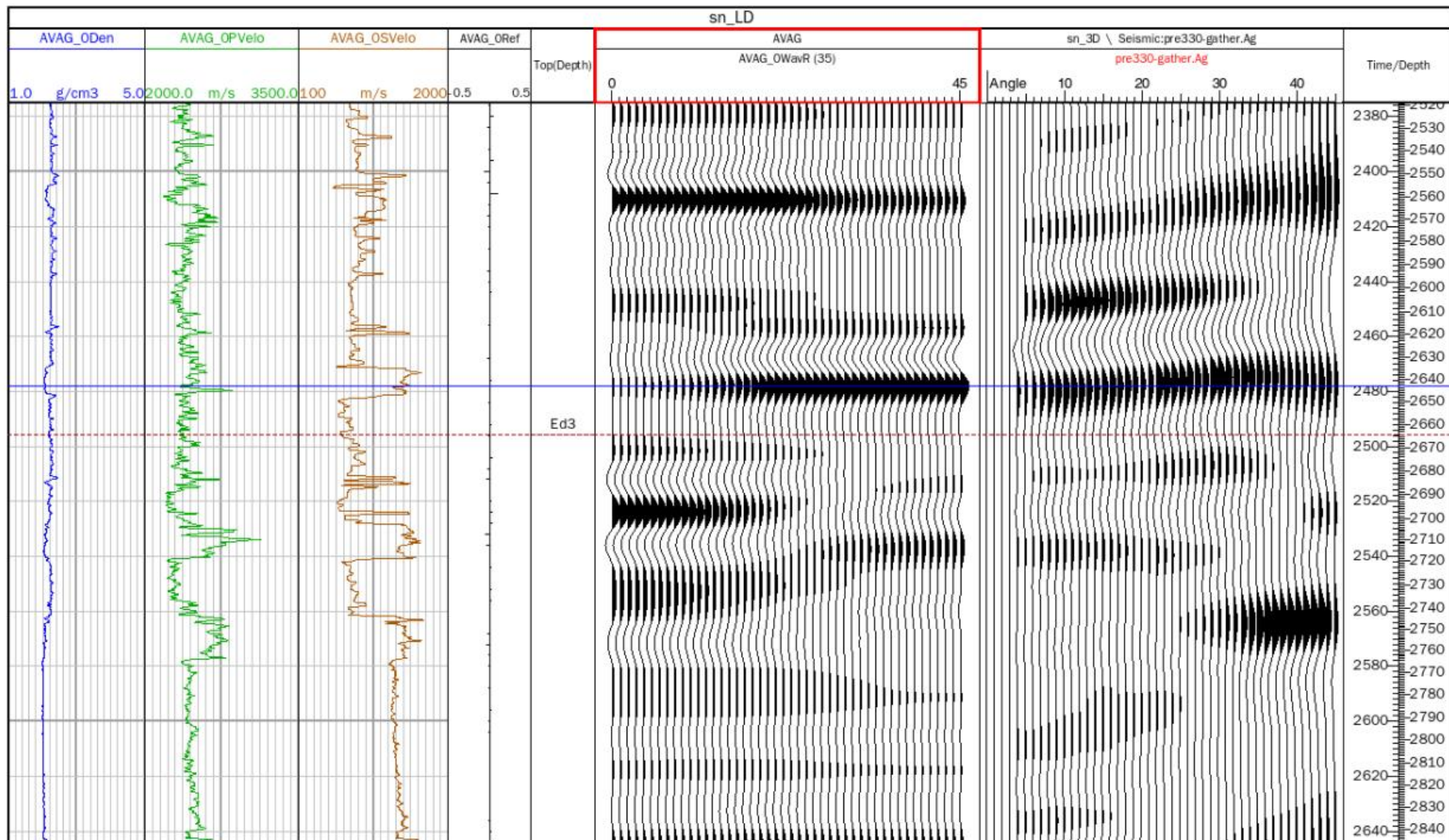
Synthetic

Vertical Shift in Time

Amplitude Analysis...

Save

Save As...



Vertical Shift in Time 纵向时移



三、叠前AVA合成记录标定



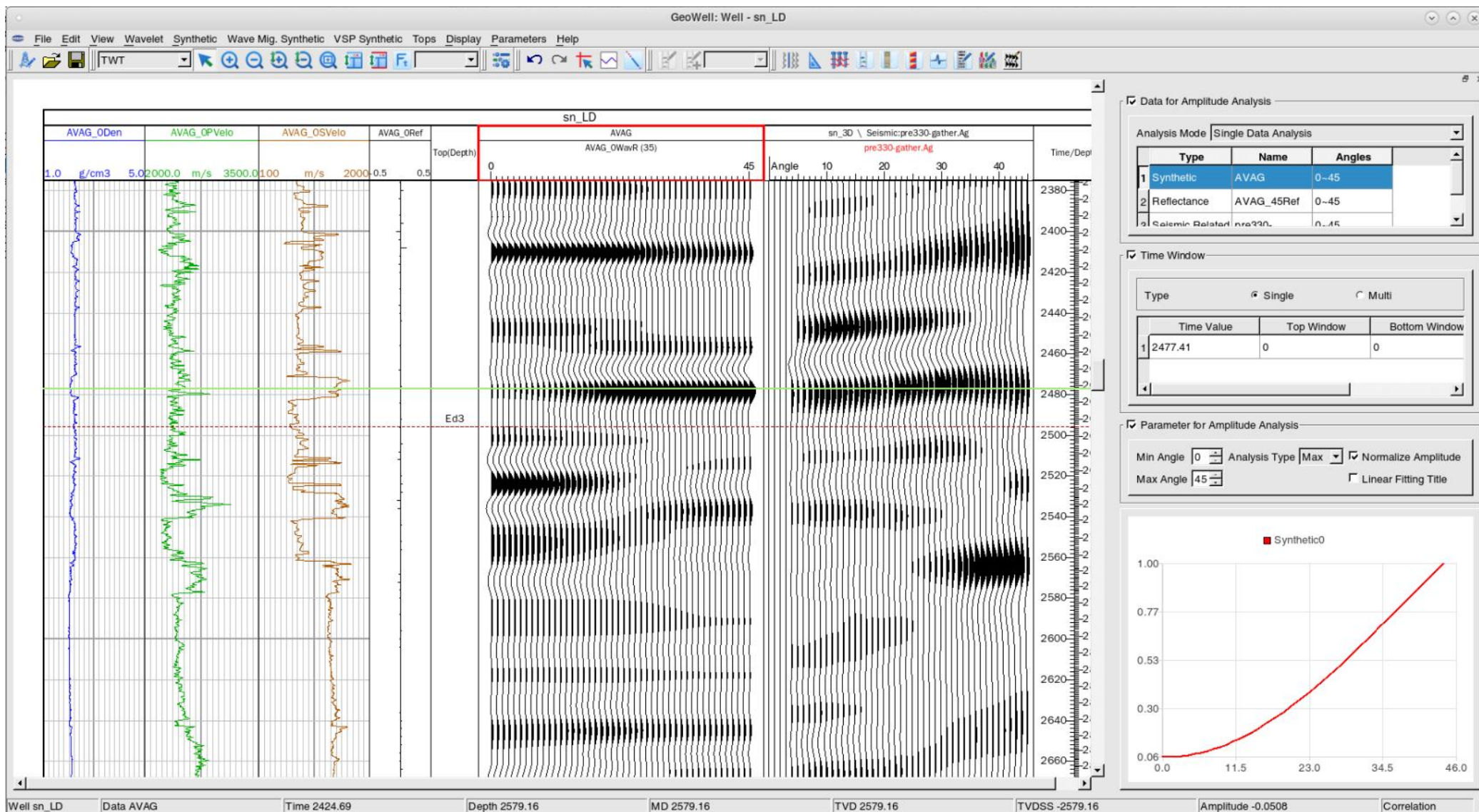
Synthetic

Vertical Shift in Time

Amplitude Analysis...

Save

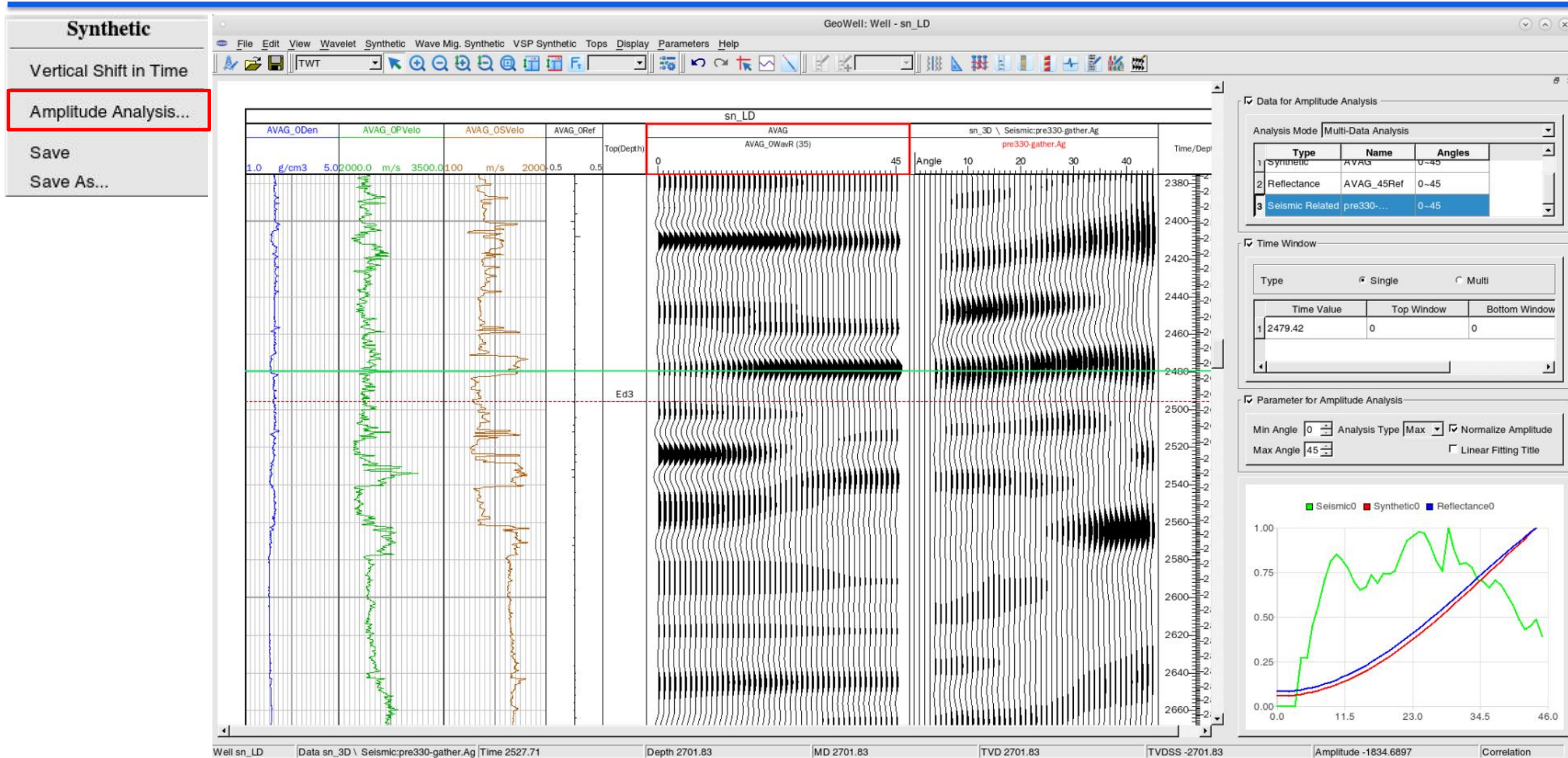
Save As...



Amplitude Analysis-Analysis Model-Single Data Analysis



三、叠前AVA合成记录标定



Amplitude Analysis-Analysis Model-Multi- Data Analysis



三、叠前AVA合成记录标定



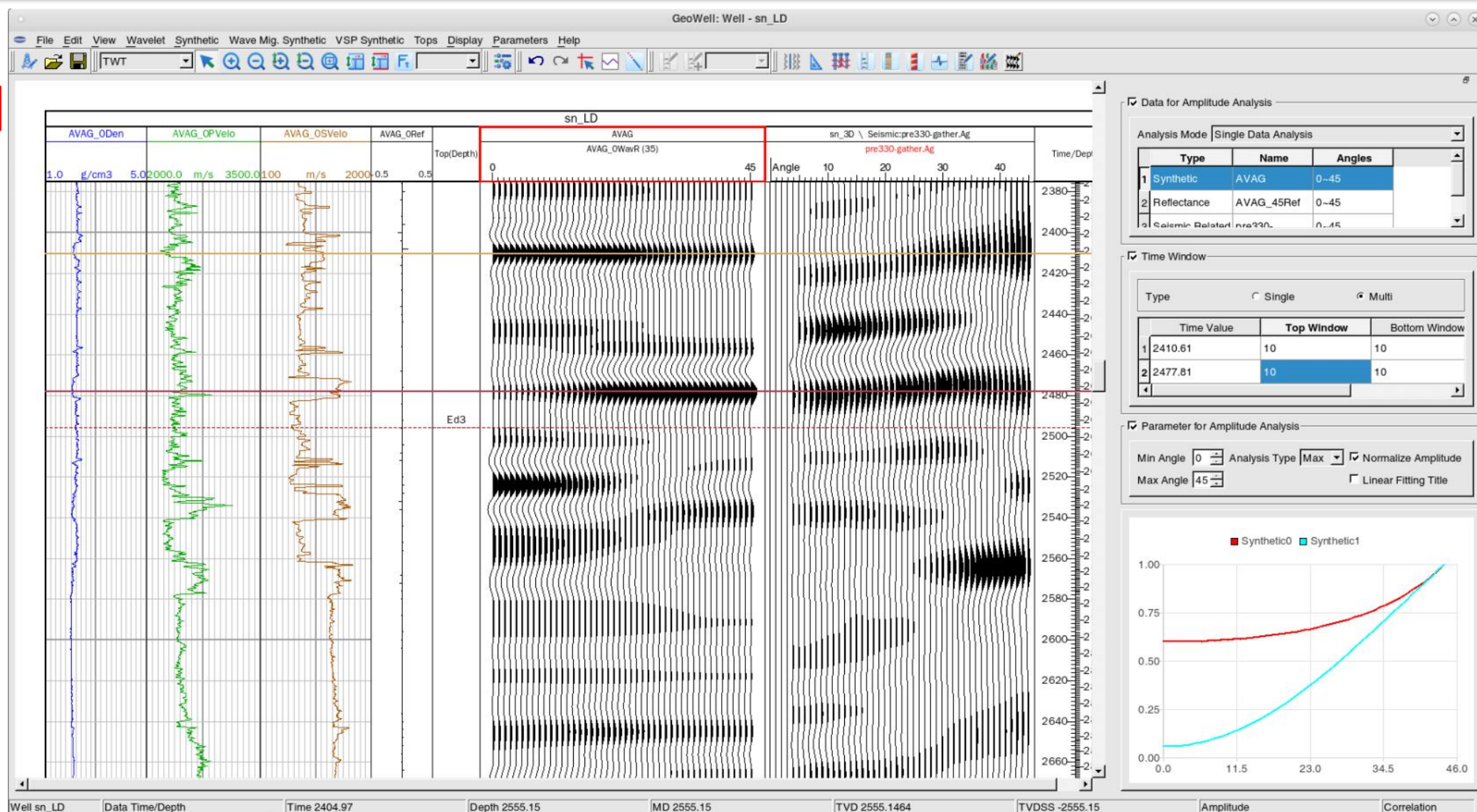
Synthetic

Vertical Shift in Time

Amplitude Analysis...

Save

Save As...



Amplitude Analysis-Time Window -Single



三、叠前AVA合成记录标定



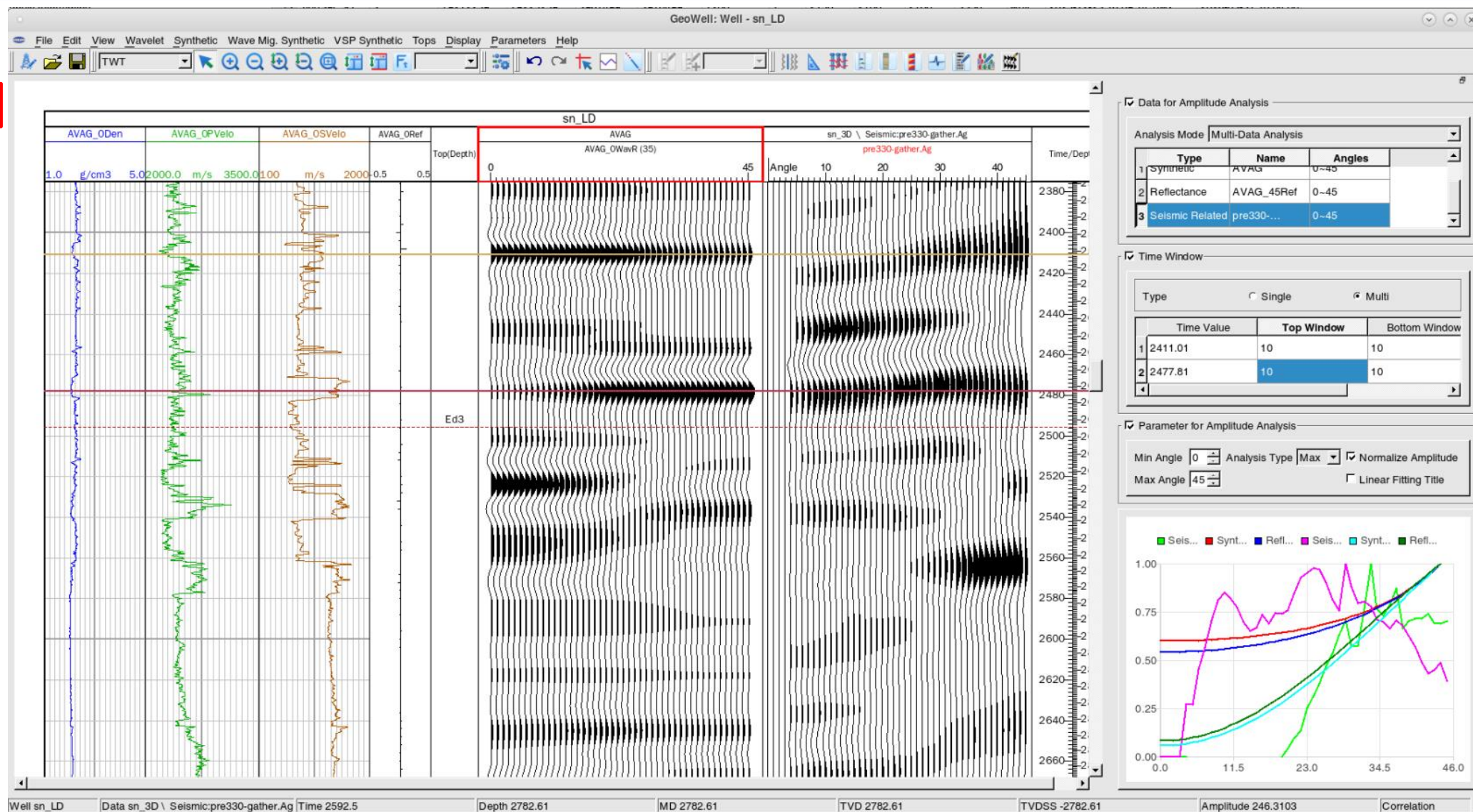
Synthetic

Vertical Shift in Time

Amplitude Analysis...

Save

Save As...



Amplitude Analysis-Time Window Multi

感谢大家对GeoEast软件的 信任和支持!

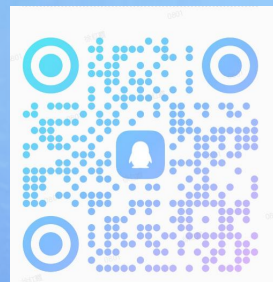
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问题管理系统: <https://wt.gs.com.cn>

QQ交流群: 196011710、340847471

官网网址: <http://www.gs.com.cn>

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