Encl. 73V
Hauvette 2022, Seismic interpretation around the Greater Geneva Basin
Tectonics of the Western Northern Alpine Foreland
Results of PhD Thesis, University of Fribourg, 2023.

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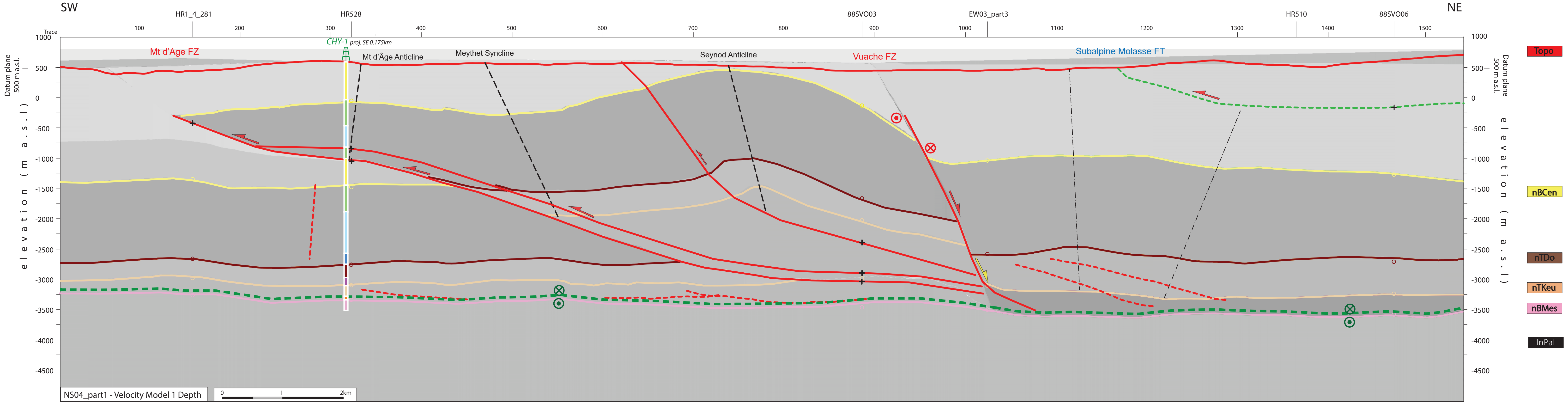
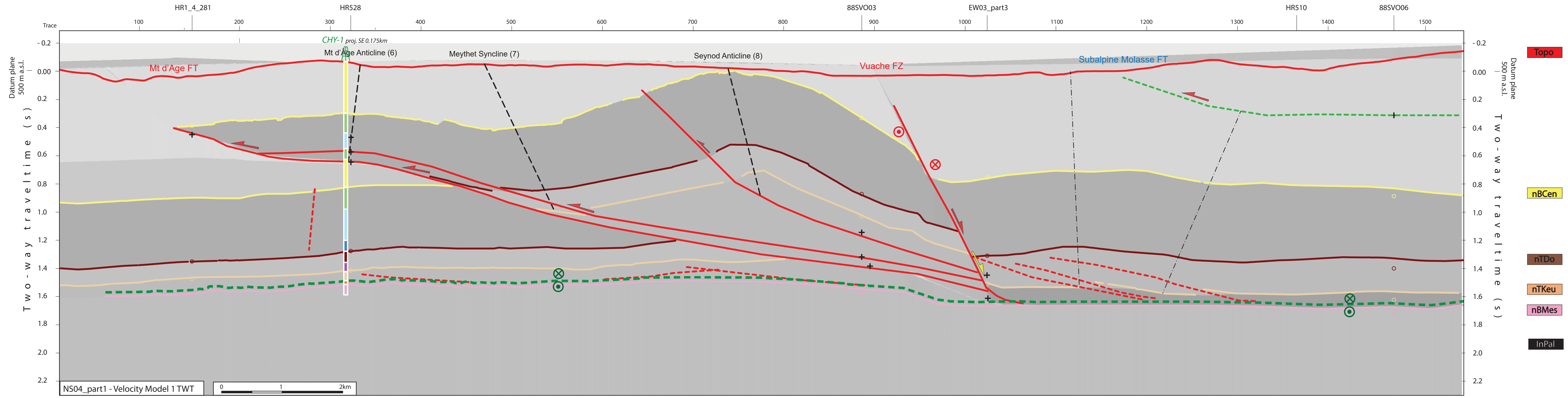
2D seismic line NS04_part1 (FR)





Structural Interpretation

- Correlated fault stick (with intersection cross with other surveys)
- Non-correlated fault stick
- Conceptual fault stick
- Basal décollement zone
- Fault corridor boundary
- Major dip change line
- Fold axial surface

⊙ Displacement vector pointing towards the observer
⊗ Displacement vector pointing away from the observer
Displacement vector during Cenozoic
Displacement vector during Jurassic

Stratigraphic Interpretation

- Horizon well defined
- Horizon poorly defined / intra Paleozoic reflections / near Base Quaternary model (GESDEC)
- ○ Horizons TWT at line intersections
- Well: Projected perpendicular to the seismic line

Well abbreviation
(Map and section)

Chapery-1	CHY-1
Savoie-101	SV-101
Savoie-104	SV-104
Savoie-105	SV-105
Savoie-108	SV-108
Savoie-109	SV-109

Other abbreviations

Trace	Seismic trace
FZ	Fault zone
FC	Fault corridor
TWT	Two way traveltime
proj.	Projected
s	Seconds
nT	near Top
nB	near Base
Q	Quaternary
Cen	Cenozoic
UMa	Upper Malm
LMa	Lower Malm
Do	Dogger
Li	Lias
Keu	Keuper
Mus	Muschelkalk
Mes	Mesozoic
InPal	Intra Paleozoic

Well stratigraphy

- 🟨 Cenozoic & Quaternary
- 🟧 Lower Cenozoic (Eocene?)
- 🟩 Cretaceous
- 🟦 Upper Malm
- 🟦 Lower Malm (Oxfordien)
- 🟫 Dogger
- 🟪 Liassic
- ▨ Keuper
- 🟧 Muschelkalk
- ▨ Paleozoic

Interval Velocities of Model 1
Rumilly Basin area (SW of Vuache FZ)

3000 m/s	Replacement Vint
3660 m/s	Upper Cenozoic
4482 m/s	Lower Cenozoic
5721 m/s	Cretaceous + Malm
4851 m/s	Dogger+ Lias
5172 m/s	Triassic
5000 m/s	Paleozoic

Interval Velocities of Model 1
Subalpine Molasse area NE of Vuache FZ

3000 m/s	Replacement Vint
3300 m/s	Upper Cenozoic
3918 m/s	Lower Cenozoic
5617 m/s	Cretaceous + Malm
5132 m/s	Dogger+ Lias
6302 m/s	Triassic
5000 m/s	Paleozoic

Folds in detached Mesozoic and Cenozoic sedimentary cover

- Anticline visible on surface and on seismic data (blue -> only in Cenozoic cover)
- Syncline visible on surface and on seismic data (blue -> only in Cenozoic cover)
- Anticline visible only on seismic data (blue -> only in Cenozoic cover)
- Syncline visible only seismic data (blue -> only in Cenozoic cover)

Fold Names

2	Musiège Anticline
6	Mt d'âge Anticline
7	Meythet Syncline
8	Seynod Anticline
9	Villaz Syncline
14	Mandalaz Anticline
20	Veyrier Anticline

Main Faults at nBCen (near Base Cenozoic)

- Reverse fault
- Strike-slip fault
- Normal fault
- Fault corridor

FT: Frontal Thrust
FBT: Frontal Back Thrust
FZ: Fault Zone
FC: Fault Corridor

Areas

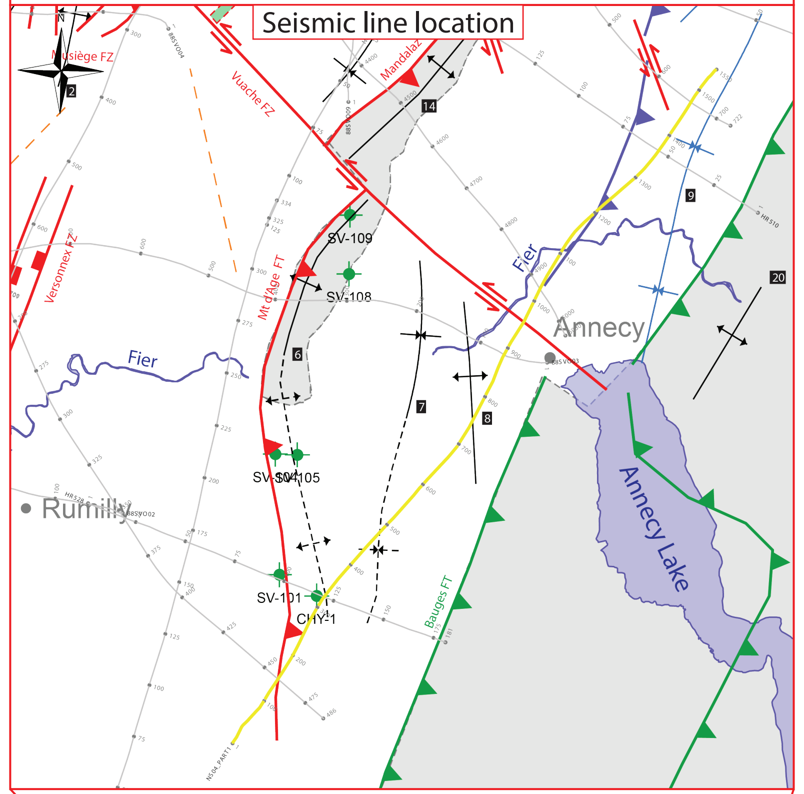
- Molasse Basin (Quaternary or Molasse outcrops)
- Mesozoic outcrops
- Cretaceous outcrops at the bounday between the Molasse Basin and the Jura fold and Thrust Belt

Other features

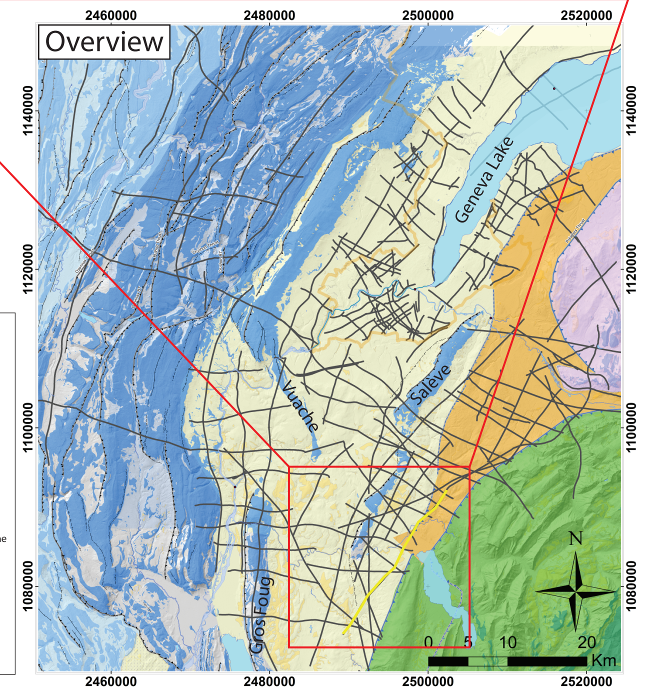
- 250 Seismic lines with trace numbers
- **Interpreted seismic lines (left)**
- Geomorphologic lineaments
- GEo-01 Wells
- Frontier CH-FR

0 km 2

Seismic line location



Overview



Legend

Tectonic domains

- ▨ Molasse Basin
- 🟧 Subalpine Molasse
- 🟦 Internal Jura *
- 🟦 External Jura
- 🟪 Penninic nappes
- 🟩 Ultrahelvetic nappes

* plus the Salève, Gros Foug and Vuache structures in the Molasse Basin

Other features

- Border
- Seismic Lines
- Thrust
- Alpine Thrust

Coordinate system: CH1903+ / LV95