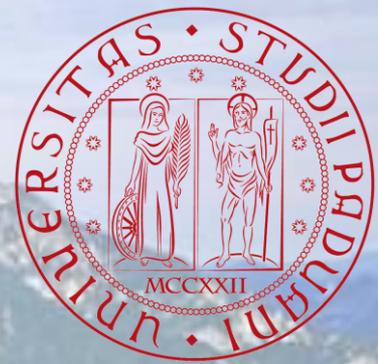


**Corso di laurea in Scienze Geologiche**  
**Dipartimento di Geoscienze**  
**Tesi di Laurea Triennale**



# **Stratigrafia del Giurassico Inferiore nella sezione delle Coste di Salò (Ledro)**

**Laureanda: Valeria Mezzanotte  
(1145335)**

**Relatore: Dott. Marco Franceschi**  
**Correlatore: Prof. Nereo Preto**

# SCOPO

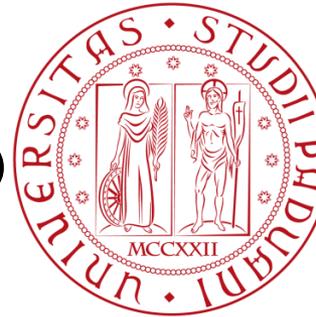


Caratterizzazione lito- e biostratigrafica della Formazione della Val d'Oro (Giurassico inferiore), in particolare della sua parte sommitale nella sezione delle Coste di Salò.

# INQUADRAMENTO GEOGRAFICO

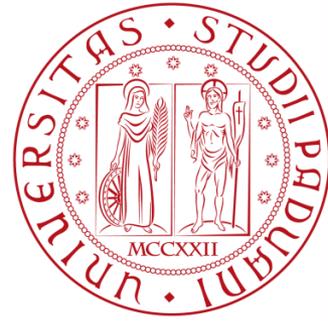


# INQUADRAMENTO GEOGRAFICO

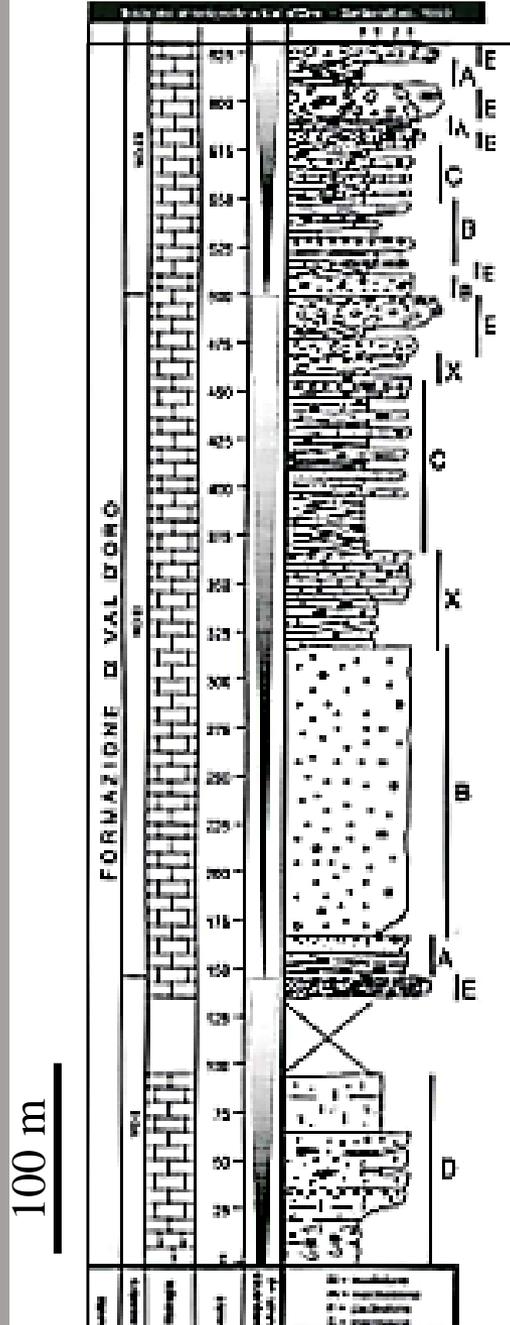


Google Earth

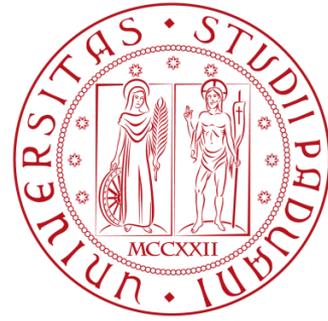
© 2018 Google  
Image © 2019 Maxar Technologies



# LA FORMAZIONE DELLA VAL D'ORO

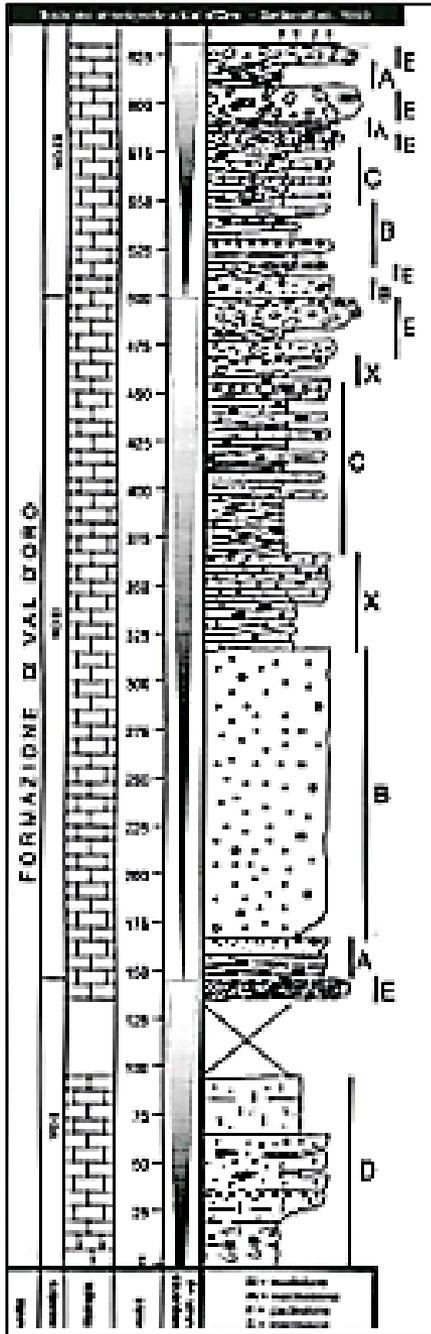


(Casolari & Picotti, 1997)



- Depositata nel Giurassico Inferiore (Sinemuriano)

100 m

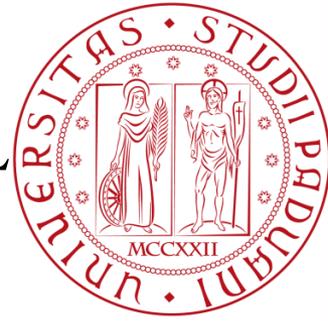


AGE (Ma)	Epoch/Age (Stage)	Polarity Chron	Ammonites		Calcareous Nannofossils				
			Tethyan Ammonites	Boreal Ammonites	Tethyan	Boreal Zonation			
185	Toarcian 182.7	e-To N	<i>Harpoceras serpentinum</i>	<i>Harpoceras faldferum</i>	NJT6	NJ6	<i>Carinolithus superbus</i>		
		Pl-To R	<i>Dactyloceras tenuicostatum</i>	<i>Dactyloceras tenuicostatum</i>	NJ5b	NJ5b			
	Pliensbachian	Il-PlI N	<i>Ematiceras emaciatum</i>	<i>Pleuroceras spinatum</i>	NJT5a	NJ5a	<i>Crepidolithus impontus</i>		
		m-PlI R	<i>Arietoceras algovianum</i>				<i>Lotharingius hauffi</i>		
		m-PlI R	<i>Furoniceras lavinianum</i>	<i>Amaltheus margaritatus</i>	NJT4b	NJ4b			
		e-PlI N	<i>Productyloceras davoei</i>	<i>Productyloceras davoei</i>					
		e-PlI R	<i>Tragophylloceras ibex</i>	<i>Tragophylloceras ibex</i>	NJT4a	NJ4a	<i>Similiscutum cruciulus</i>		
		Si-PlI N	<i>Uptonia jamesoni</i>	<i>Uptonia jamesoni</i>			<i>Parhabdolithus robustus</i>		
		190	Early Sinemurian	Si-PlI N	<i>Echioceras raricostatum</i>	<i>Echioceras raricostatum</i>	NJT3b	NJ3	
				Il-Sin R	<i>Oxynoticeras oxynotum</i>	<i>Oxynoticeras oxynotum</i>			<i>Crepidolithus crassus</i>
Il-Sin N	<i>Asterooceras obtusum</i>			<i>Asterooceras obtusum</i>	NJT3a	NJ2b			
	<i>Caenites tumeni</i>			<i>Caenites turneri</i>					
m-Sin R	<i>Arnioceras semicostatum</i>			<i>Arnioceras semicostatum</i>	NJT2b	NJ2a	<i>Parhabdolithus marthae</i>		
e-Sin mixed	<i>Arietites bucklandi</i>			<i>Arietites bucklandi</i>			<i>Parhabdolithus liasicus</i>		
195	Hettangian	Hett-N	<i>Schlotheimia angulata</i>	<i>Schlotheimia angulata</i>	NJT2a				
			<i>Alsatites liasicus</i>	<i>Alsatites liasicus</i>	NJT1	NJ1	<i>Schizosphaerella punctulata</i>		
			<i>Psiloc. planorbis</i>	<i>Psiloc. planorbis</i>					
200	Triassic		<i>Chorstoceras marshi</i>	<i>Chorstoceras crickmayi</i>			<i>Prinsiosphaera triassica</i>		

(Casolari & Picotti, 1997)

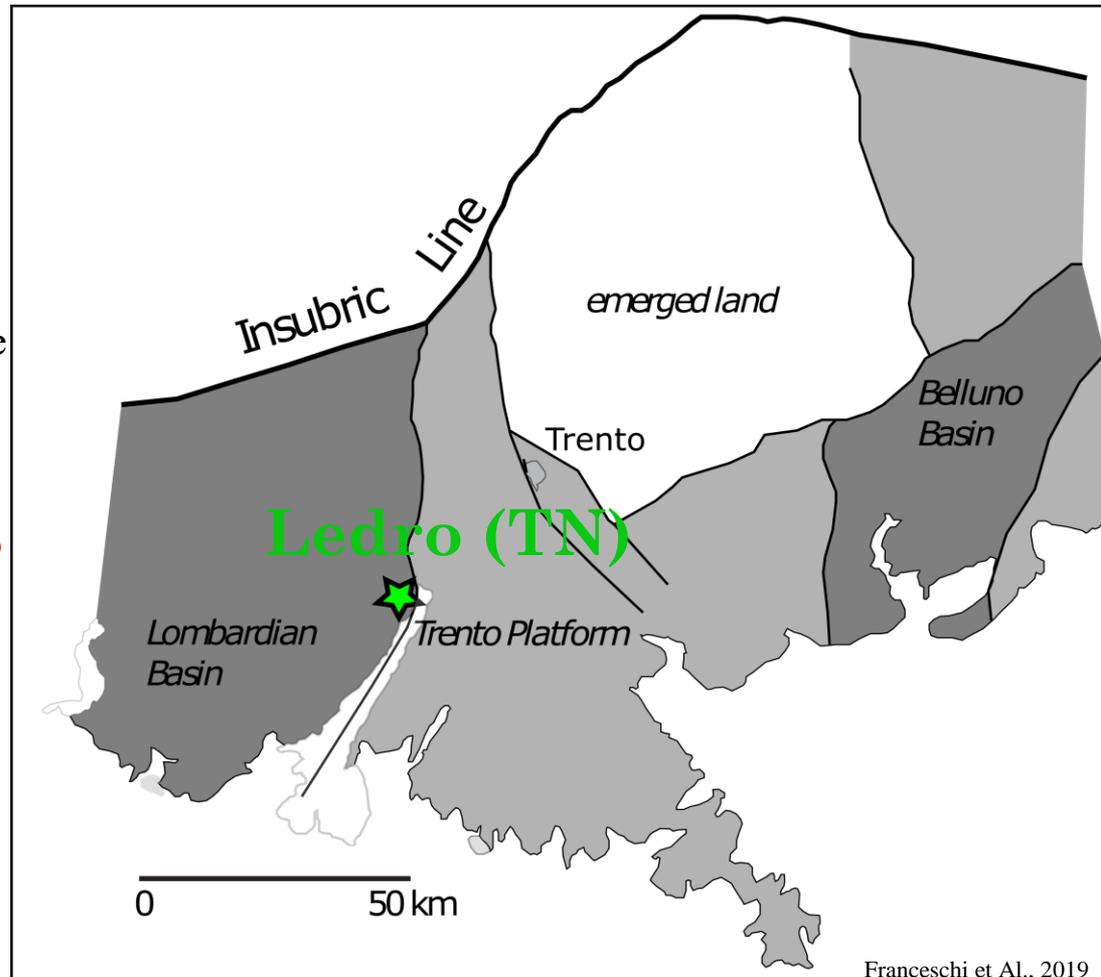


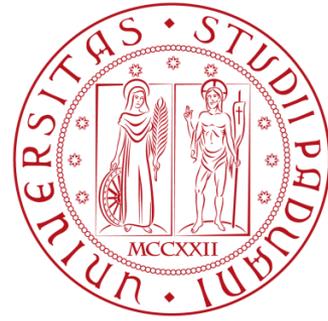
# PALEOGEOGRAFIA DEL SUDALPINO NEL GIURASSICO INFERIORE



Con l'apertura dell'Oceano Ligure Piemontese:

- Dinamica estensiva
- Ad ovest → **Bacino Lombardo**
- Ad est → **Piattaforma di Trento**





# INQUADRAMENTO STRATIGRAFICO

OVEST

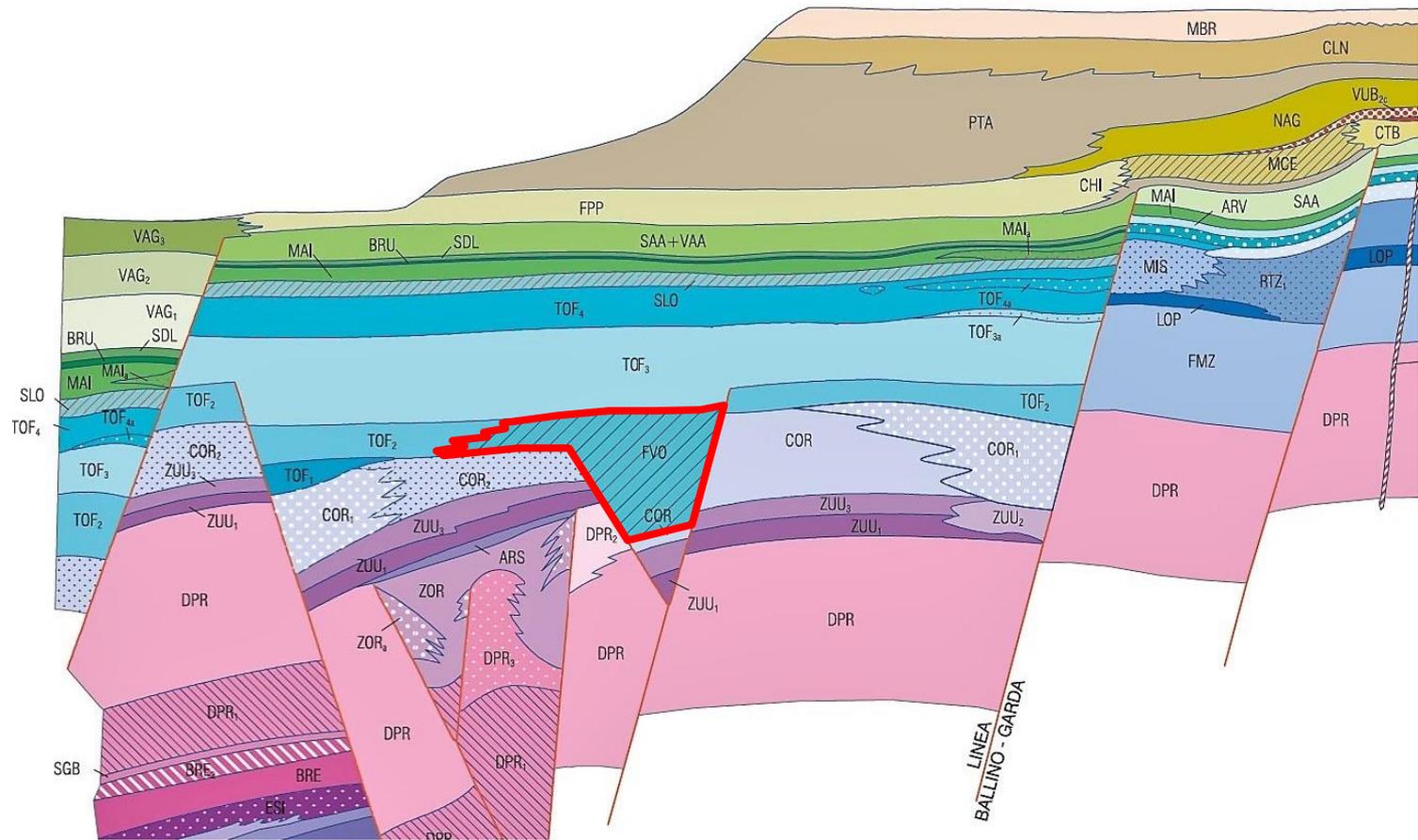
VAL DI LEDRO

RIVA DEL GARDA

EST

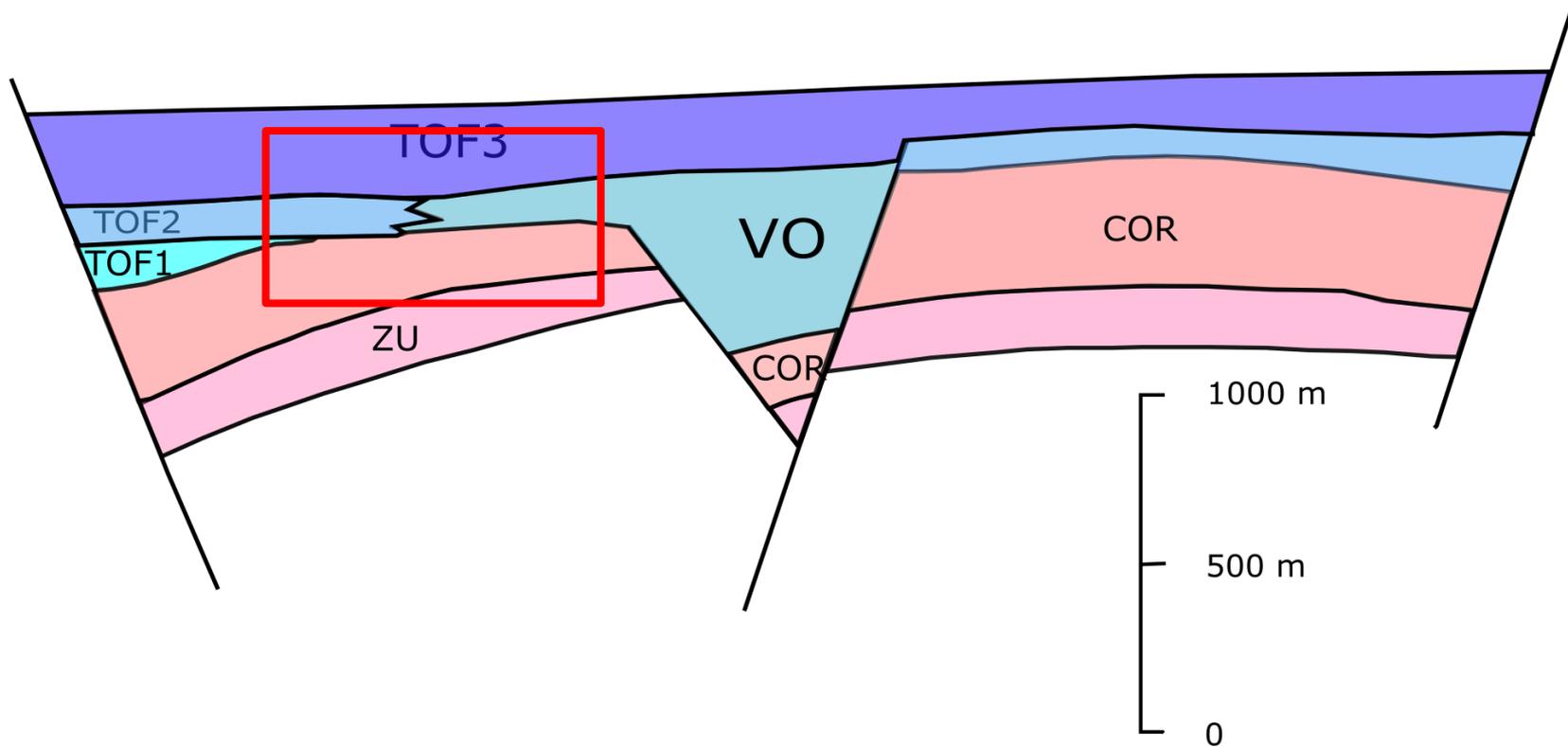
**BACINO LOMBARDO**

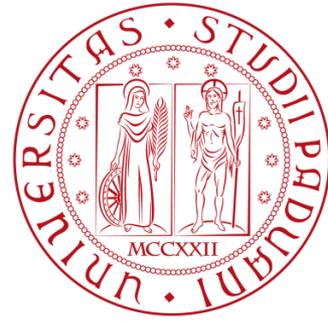
**PIATTAFORMA DI TRENTO**



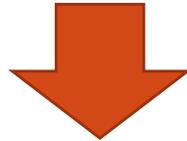
(Note illustrative Foglio Riva)

- Inquadramento cronostratigrafico di VO sulla base di correlazione litostratigrafica con unità bacinali (TOF2)



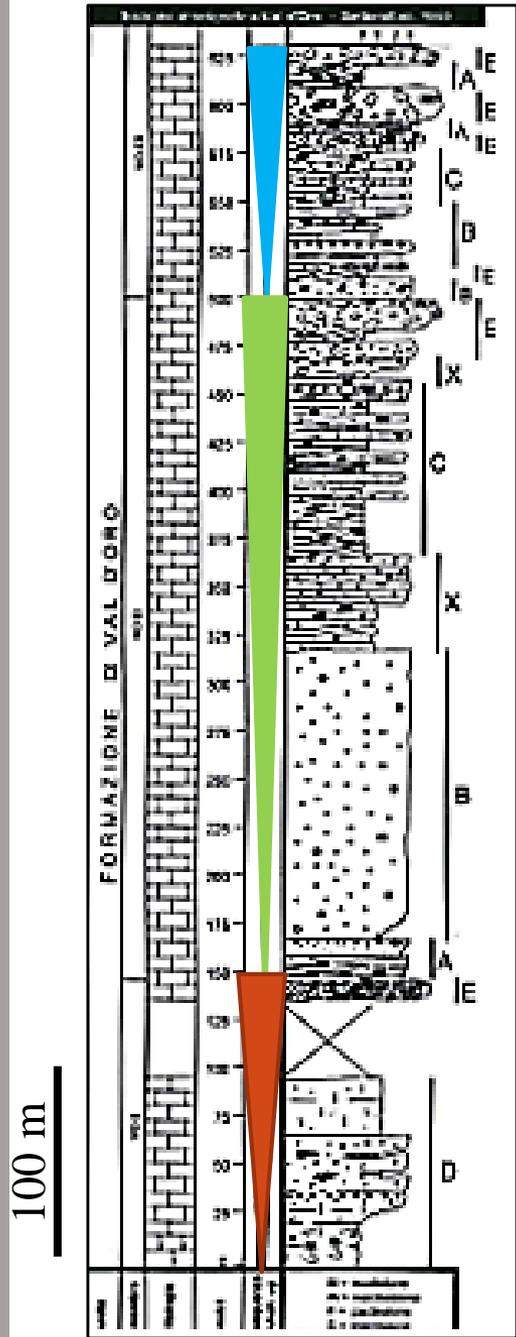


- Inquadramento cronostratigrafico di VO sulla base di correlazione litostratigrafica con unità bacinali (TOF2)



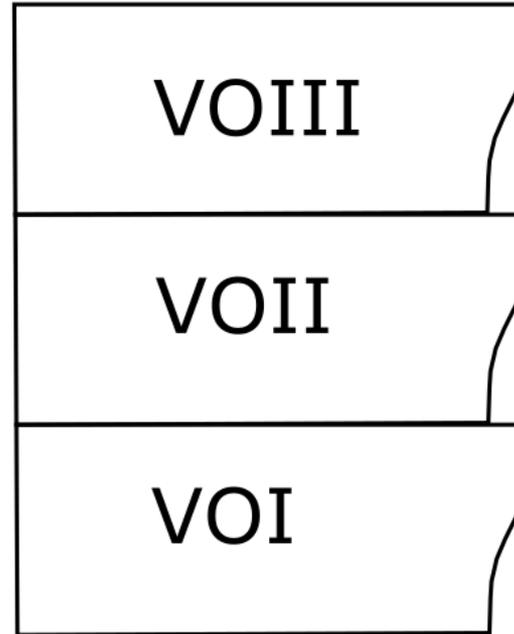
- VO depositata nella zona a *bucklandi*

	BIOZONA	SPECIE
SINEMURIANO INFERIORE	<i>Arnioceras semicostatum</i>	
	<i>Arietites bucklandi</i>	<i>Arnioceras mendax</i> → Tetto TOF2 (Castellarin, 1999)



(Casolari & Picotti, 1997)

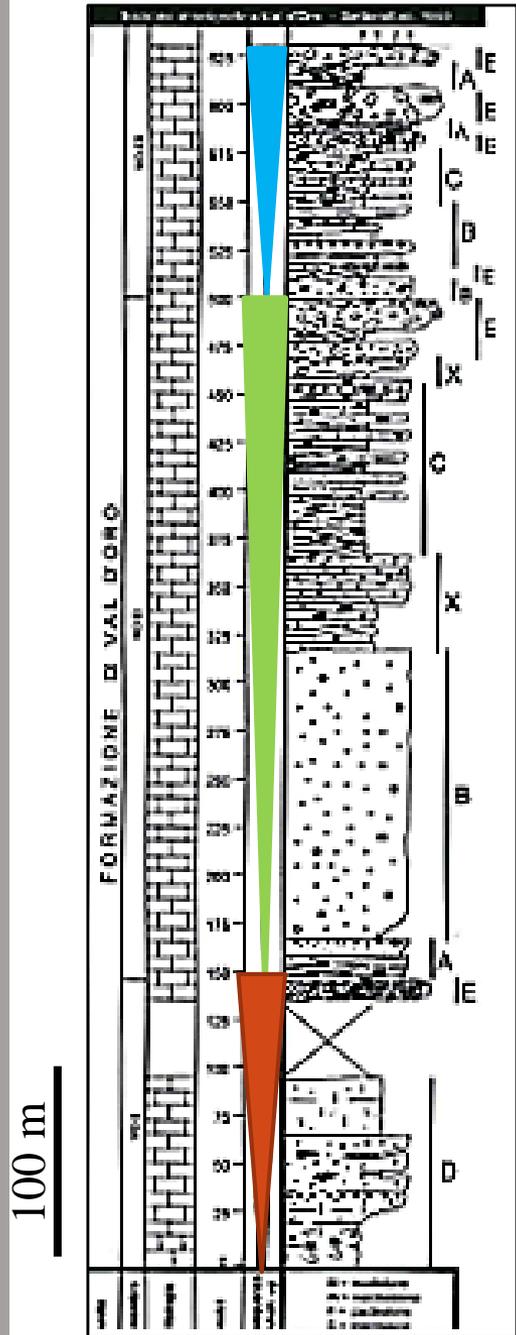
## VAL D'ORO Fm.



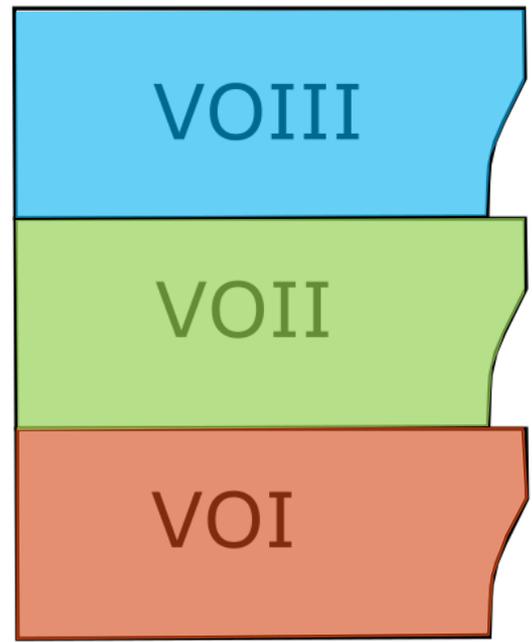
- Formata da tre cicli ettometrici *coarsening upward*, i quali rappresentano i tre membri





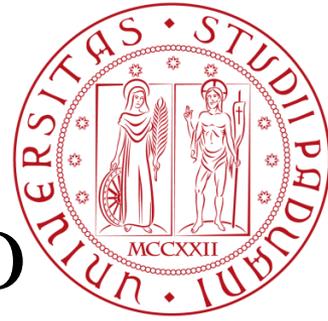


VAL D'ORO Fm.

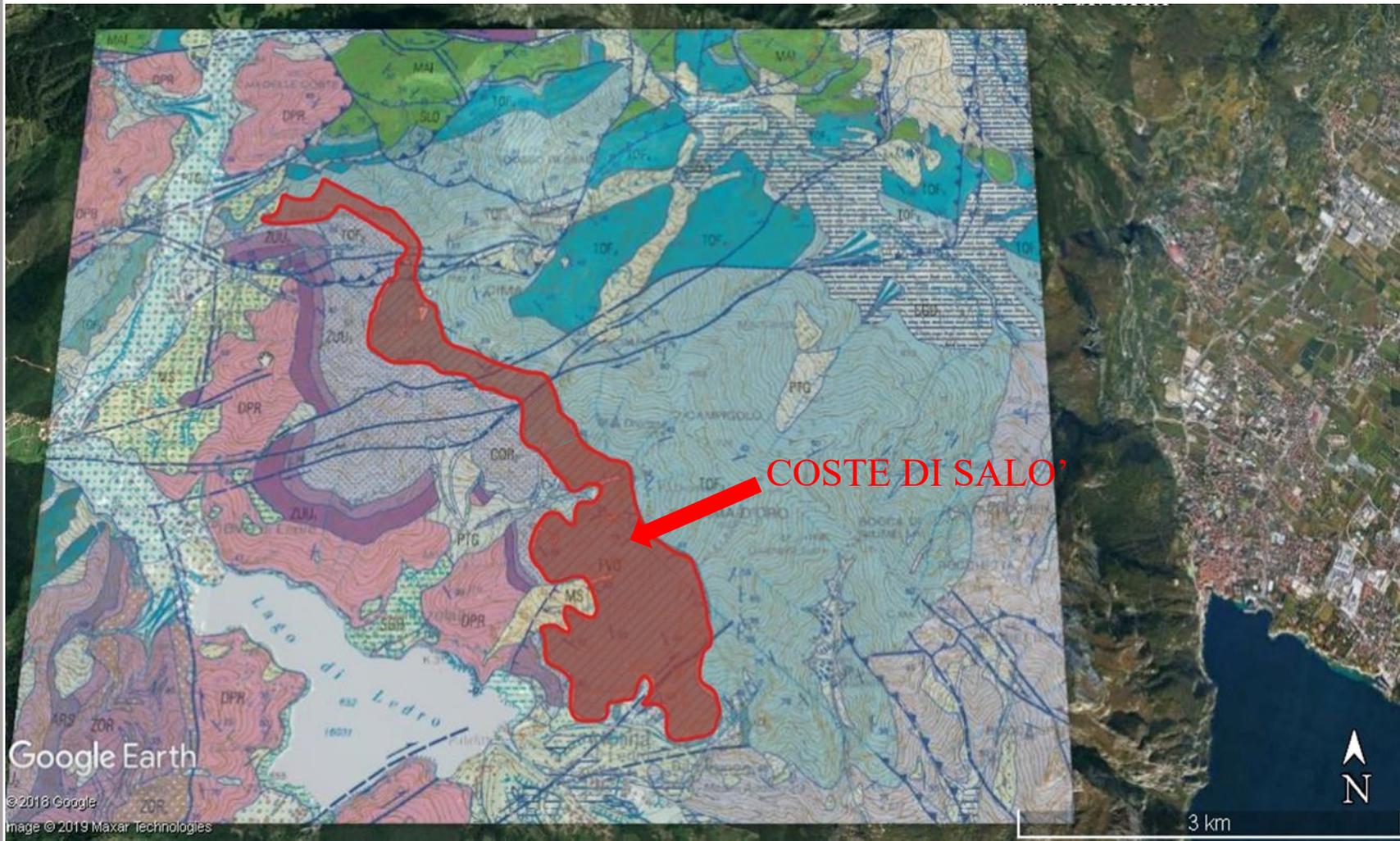


**Terzo membro:** calcari micritici chiari, più grossolani rispetto agli altri membri e selciferi.

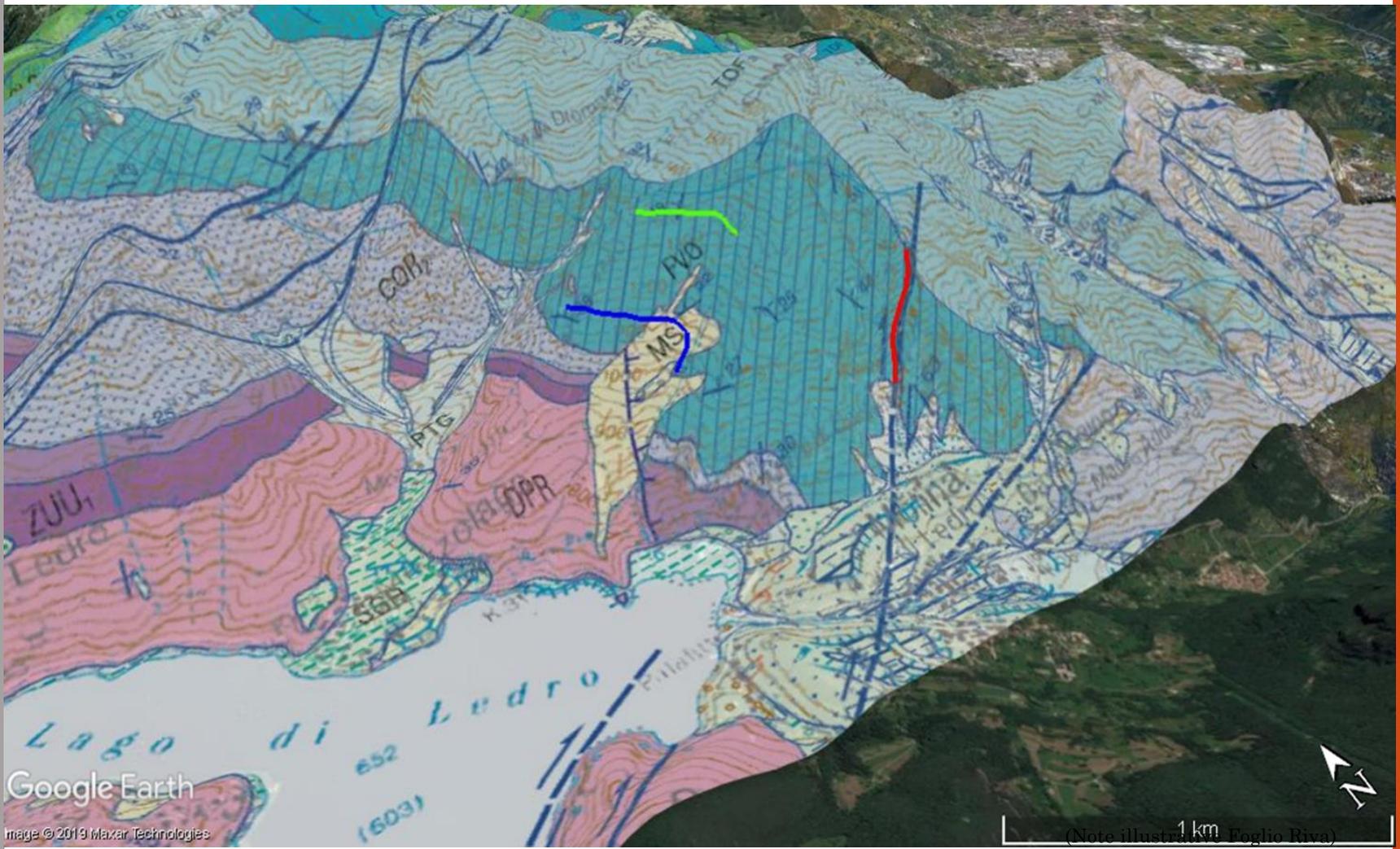
(Casolari & Picotti, 1997)



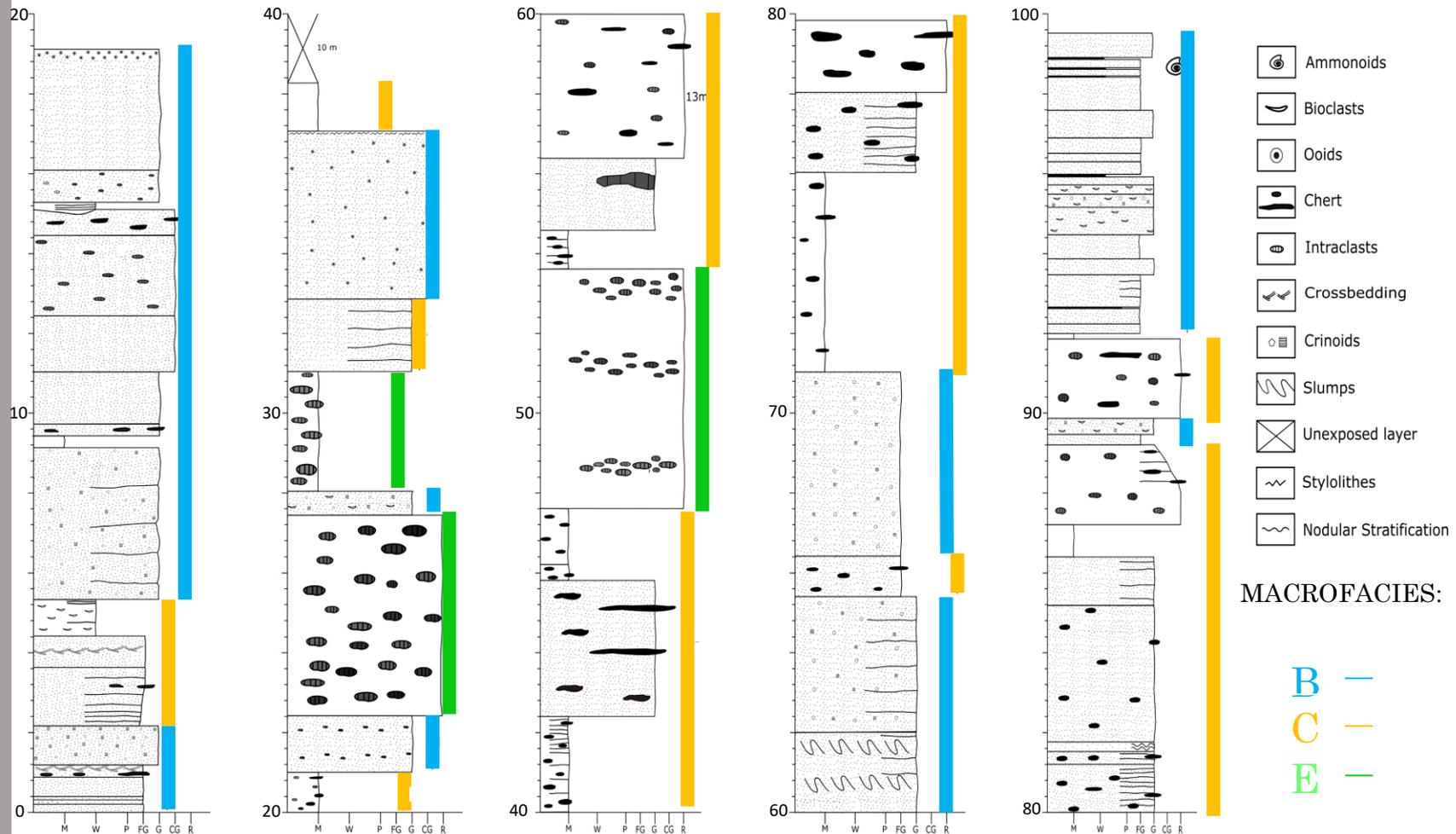
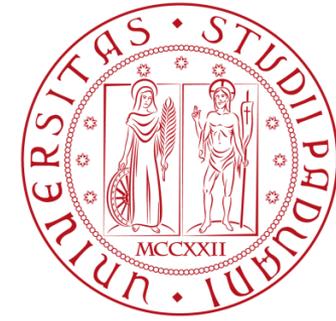
# INQUADRAMENTO GEOLOGICO



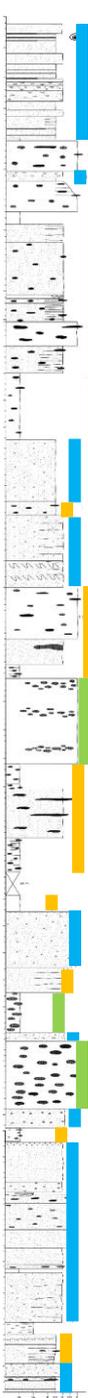
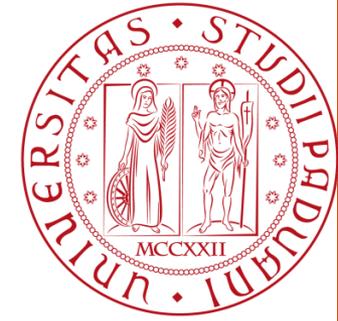
-  Sezione Val d'Oro 1
-  Sezione Val d'Oro 2
-  Sezione Coste di Salò



# SEZIONE COSTE DI SALO'

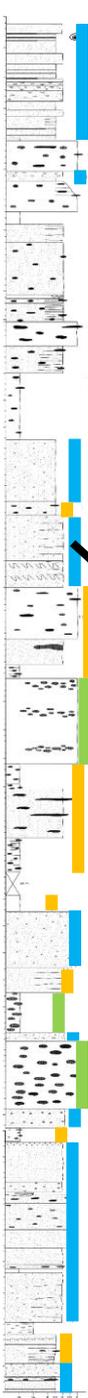


# SEZIONE COSTE DI SALO'



## MACROFACIES B:

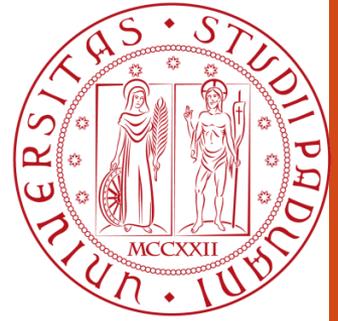
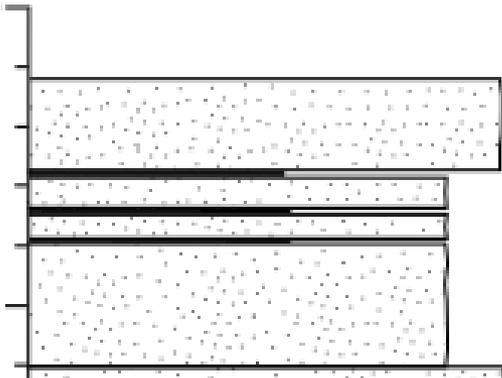
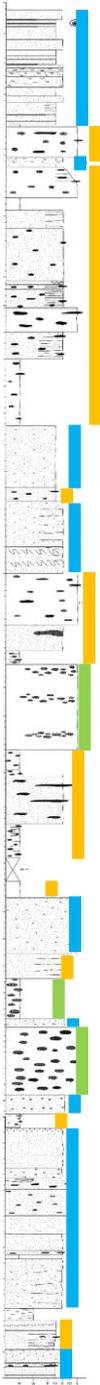
- *Grainstone* con ooidi, intraclasti e bioclasti (gusci di bivalvi o articoli di crinoidi)

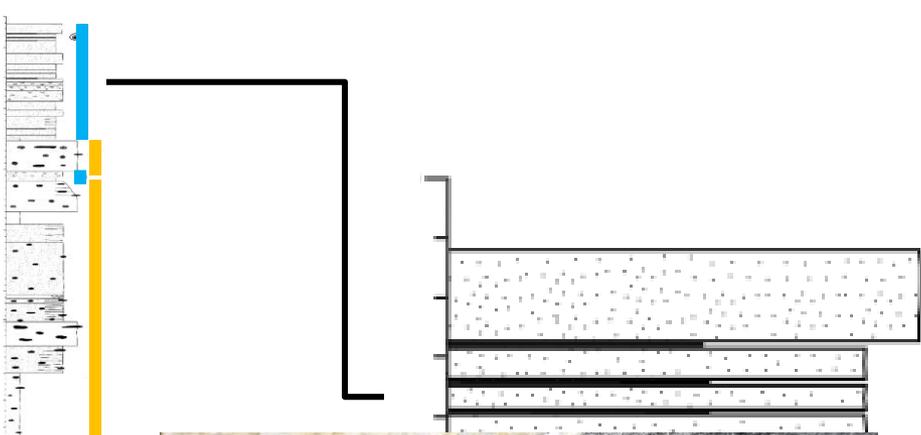


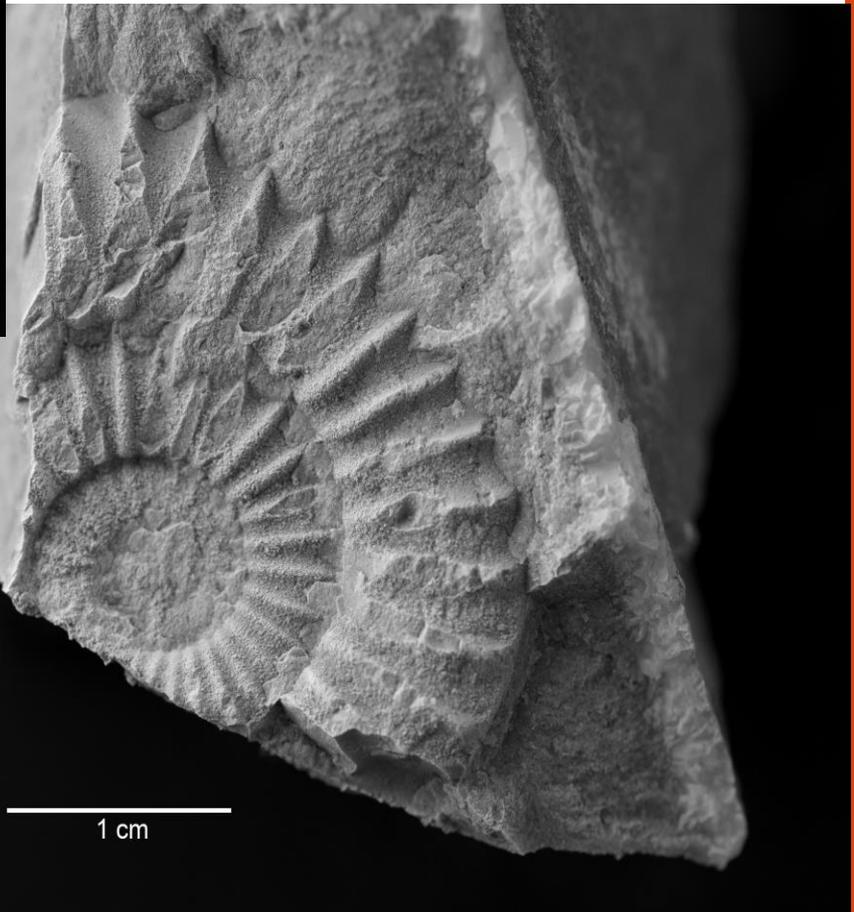
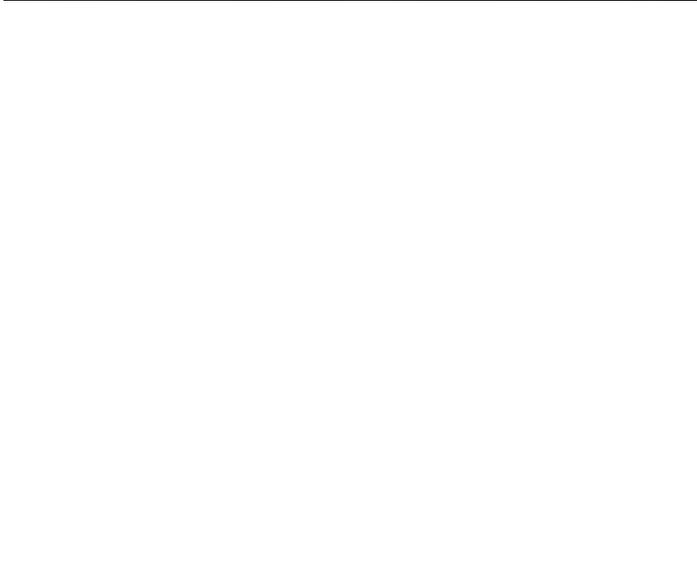
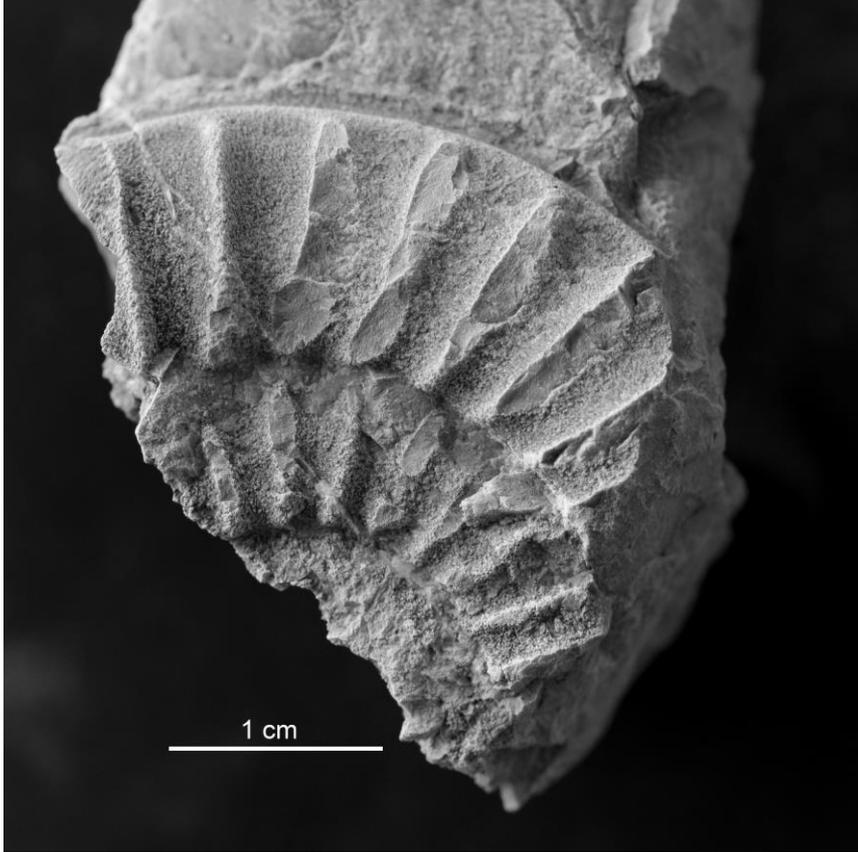
## MACROFACIES E:

- *Rudstone* con clasti decimetrici di colore scuro
- Presenza di *slump*





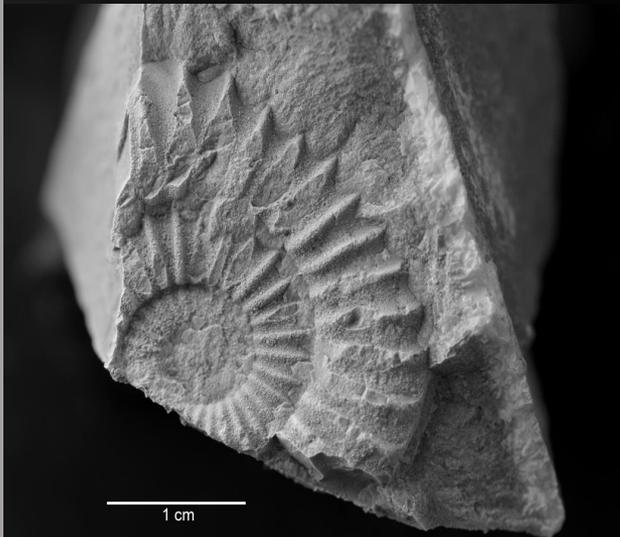
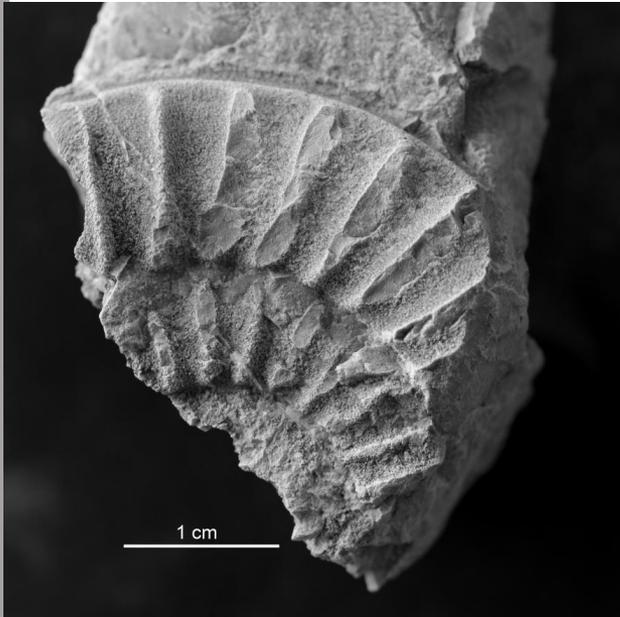




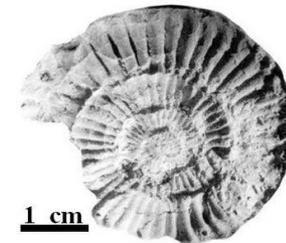
- Coste regolari
- Giri interni non ornati
- Sezione rettangolare/subrettangolare
- Ventre visibilmente carenato



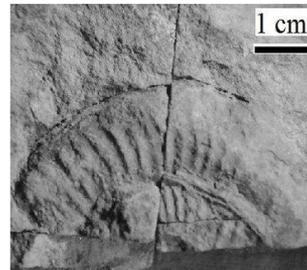
GENERE: *Arnioceras*



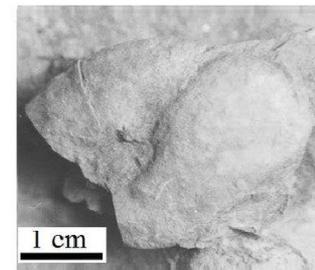
a



b



c

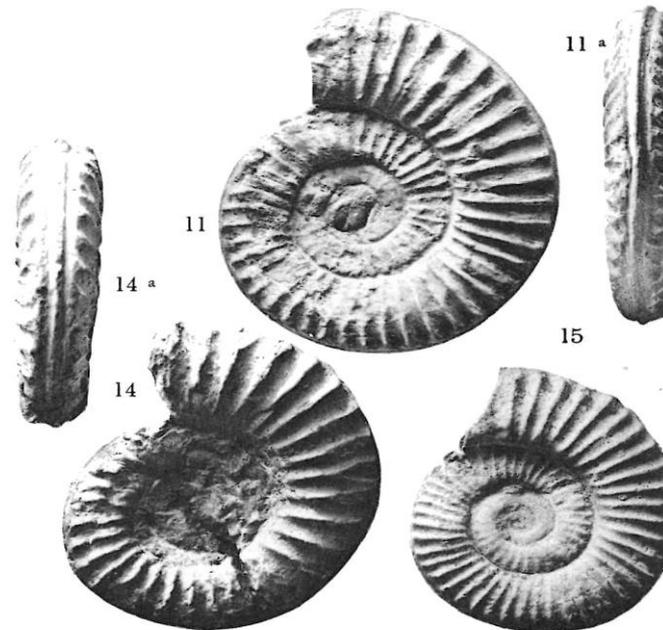
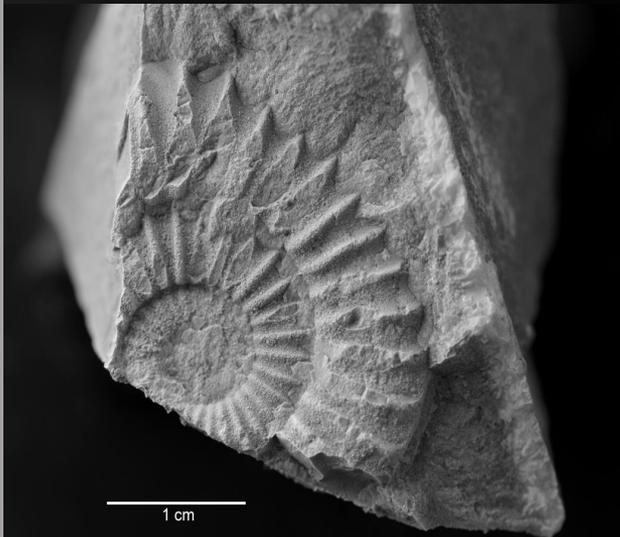
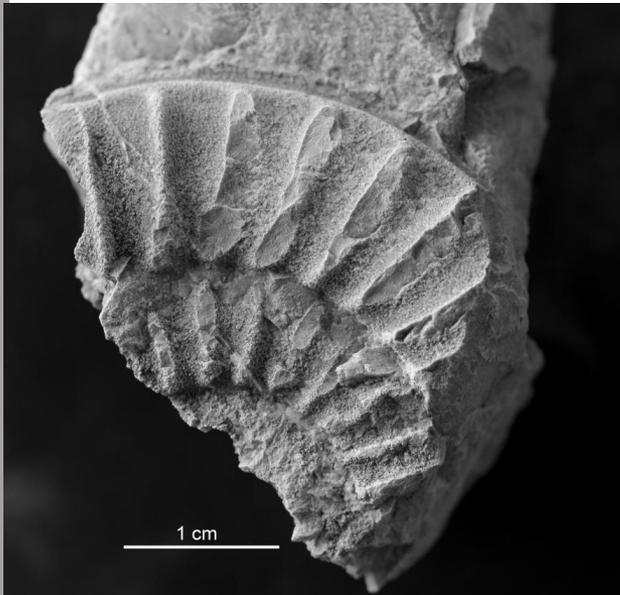


d

- Tasso di avvolgimento
- Apertura ombelicale
- Ventre non bisolcato
- Frequenza delle coste
- Coste acute



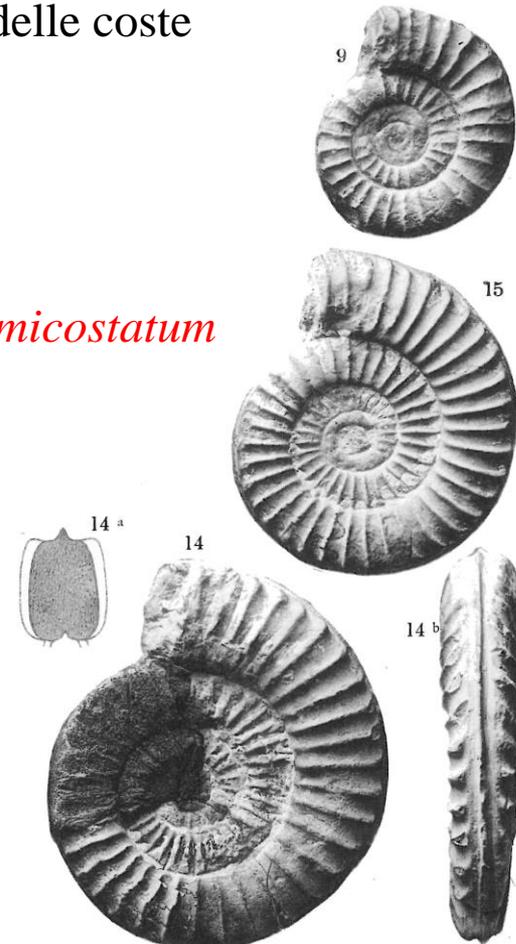
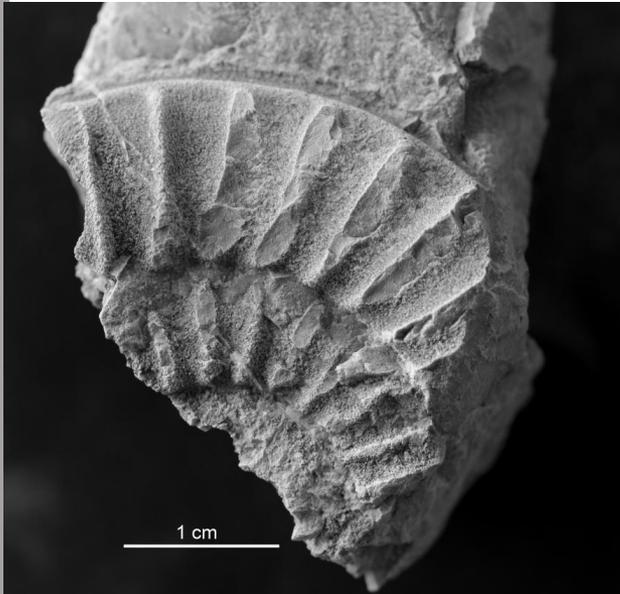
SPECIE: *A. ceratitoides*



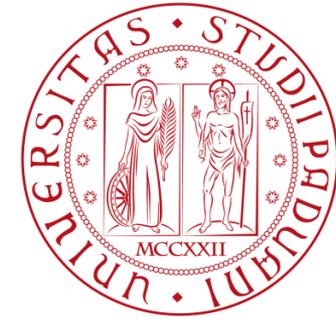
- Tasso di avvolgimento
- Apertura ombelicale
- Ventre non bisolcato
- Frequenza delle coste
- Coste acute



SPECIE: *A. semicostatum*



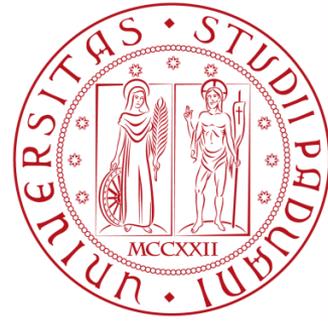
# BIOZONA A SEMICOSTATUM



	BIOZONA	SPECIE
SINEMURIANO INFERIORE	<i>Arnioceras semicostatum</i>	<i>Arnioceras ceratitoides</i> <i>Arniocerasemicostatum</i> → VO3
	<i>Arietites bucklandi</i>	<i>Arnioceras mendax</i> → Tetto TOF2 (Castellarin, 1999)

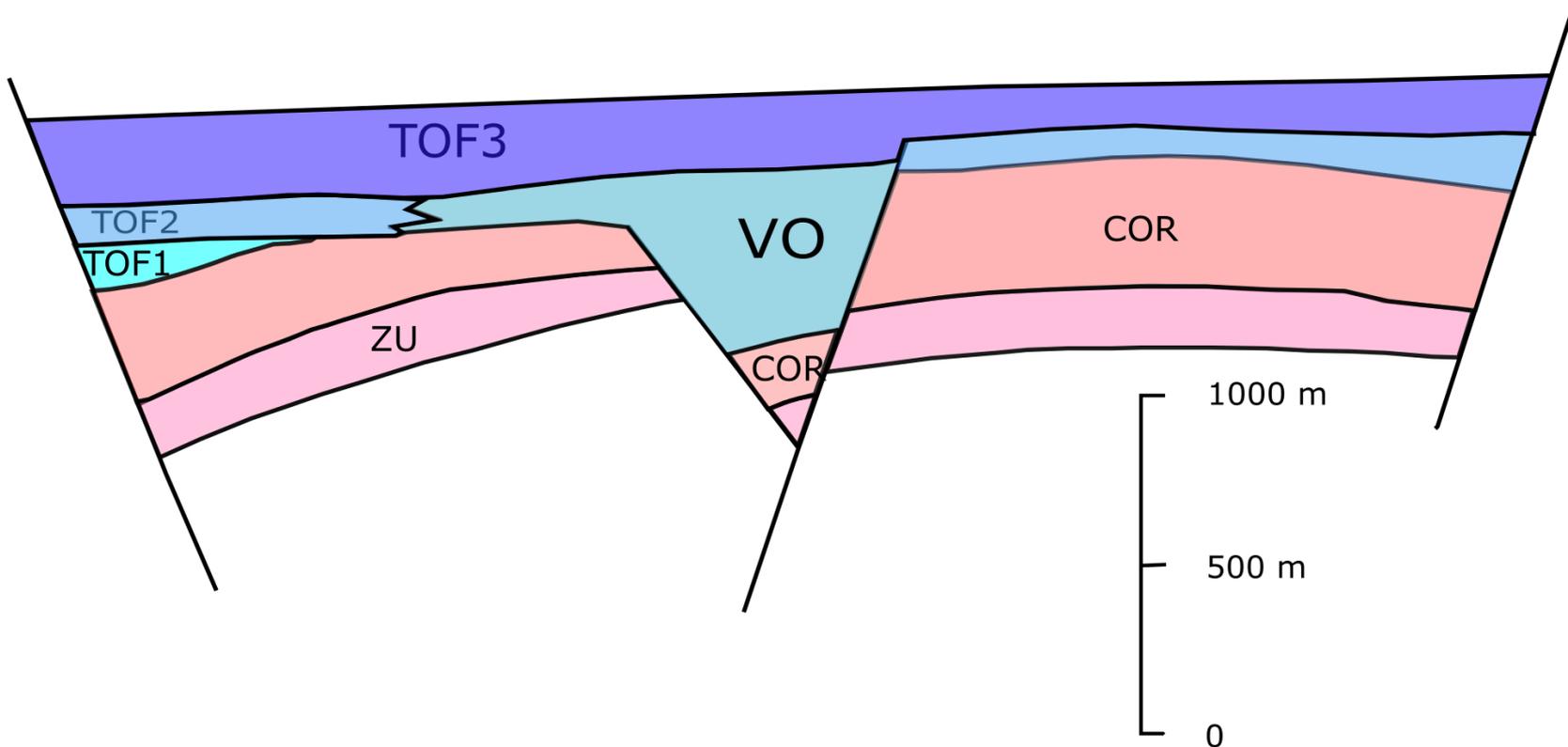
# BIOZONA A SEMICOSTATUM

Il terzo membro della Formazione della Val d'Oro si è deposto successivamente al secondo membro della Formazione del Tofino

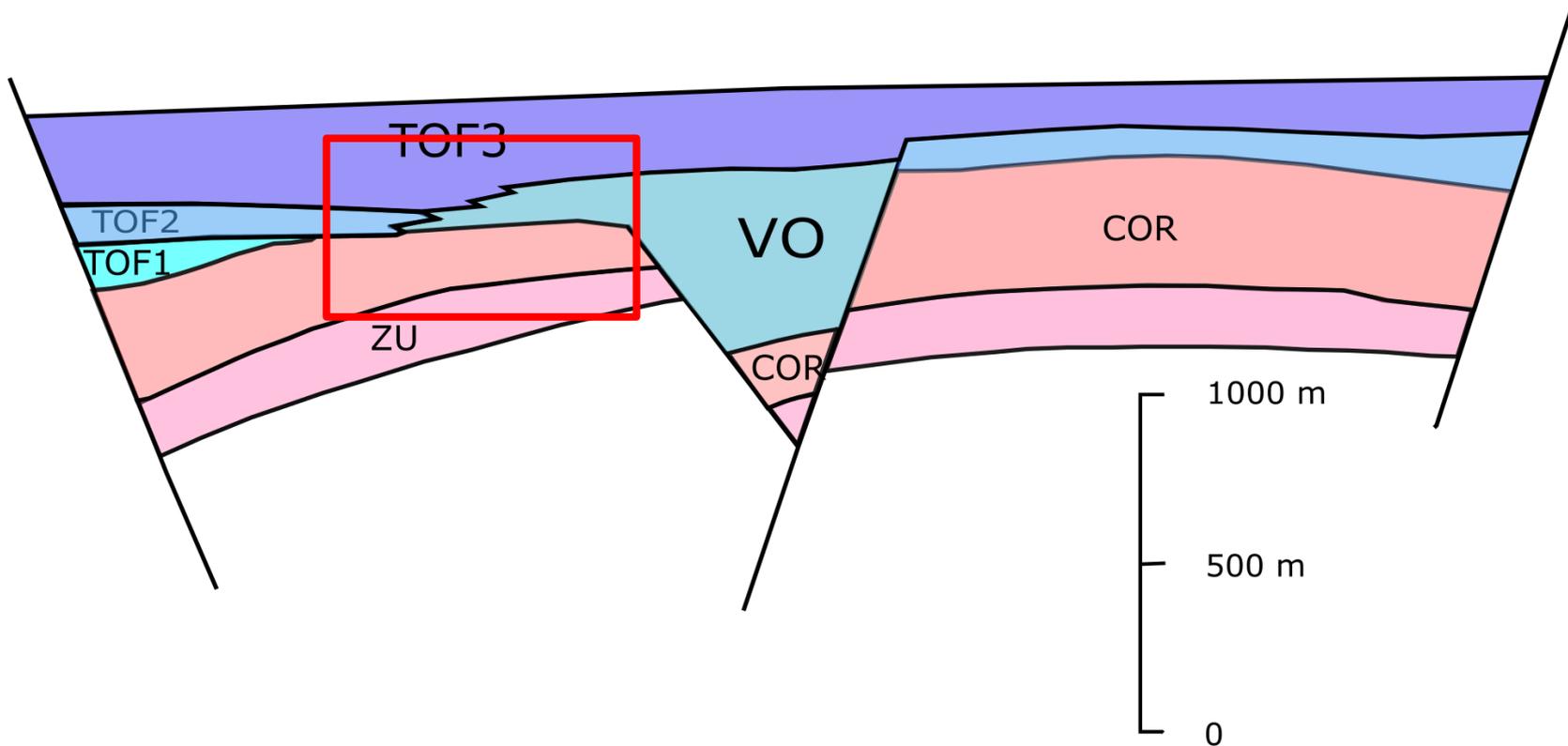


	BIOZONA	SPECIE
SINEMURIANO INFERIORE	<i>Arnioceras semicostatum</i>	<i>Arnioceras ceratitoides</i> <i>Arnioceras semicostatum</i> → VO3
	<i>Arietites bucklandi</i>	<i>Arnioceras mendax</i> → Tetto TOF2 (Castellarin, 1999)

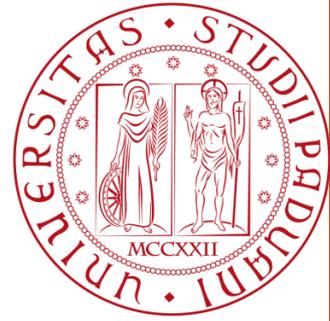
- Correlazione tra TOF2 e VO tramite collocazione litostratigrafica



**CONCLUSIONE:** eteropia tra VO3 e TOF3 tramite correlazione biostratigrafica, su analisi di specie di ammoniti ritrovate.



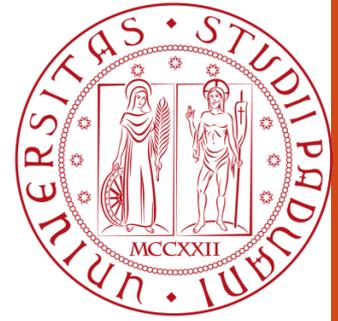
# CONCLUSIONI



1. Caratterizzazione litostratigrafica della Formazione della Val d'Oro (Giurassico Inferiore) nella Sezione Coste di Salò
2. Correlazione alle sezioni misurate precedentemente in letteratura.
3. Raffinamento dell'inquadramento biocronostratigrafico della Formazione della Val d'Oro.

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- Franceschi et Al., 2019: Tethyan carbonate platform transformations during the Early Jurassic (Sinemurian–Pliensbachian, Southern Alps): Comparison with the Late Triassic Carnian Pluvial Episode, GSA Bulletin, v. 131, 1255-1275.
- Gradstein et Al., 2012: The Geologic Time Scale 2012, v. 1.
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- Fucini, 1902: Fossili del Giurassico del Monte Cetona. Palaeontographia Italica, v. 8.



GRAZIE PER  
L'ATTENZIONE