Staatliche Geologische Dienste Deutschlands

Study Group 3D (Kf3D) of the German State Geological Surveys

3D Interoperability

Lessons learned from inter-state collaboration and the transnational project GeoMol

GeoMol
Assessing subsurface potentials of the Alpine Foreland Basins for sustainable planning and use of natural resources

Gerold Diepolder

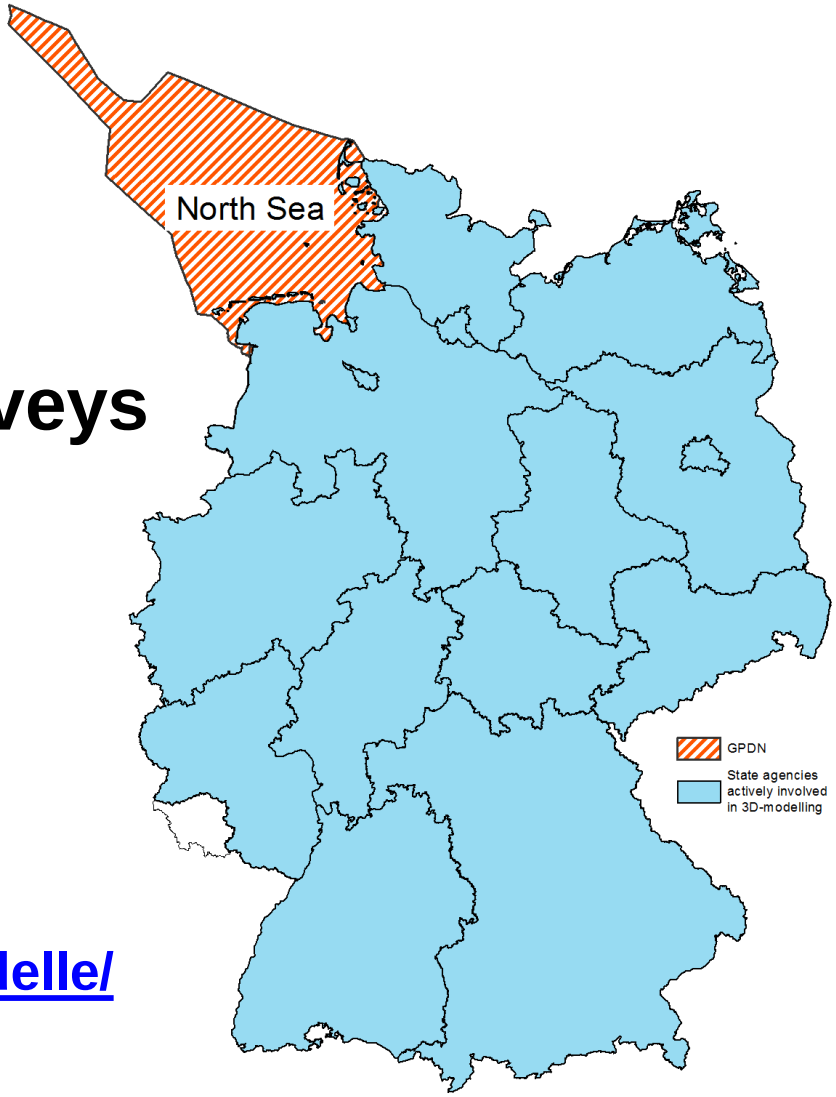
Bavarian Environment Agency (LfU) – Geological Survey

Head of Study Group 3D (Kf3D) of German State Geological Surveys
GeoMol coordination and lead

Staatliche Geologische Dienste Deutschlands

Study Group 3D (Kf3D) of the German State Geological Surveys

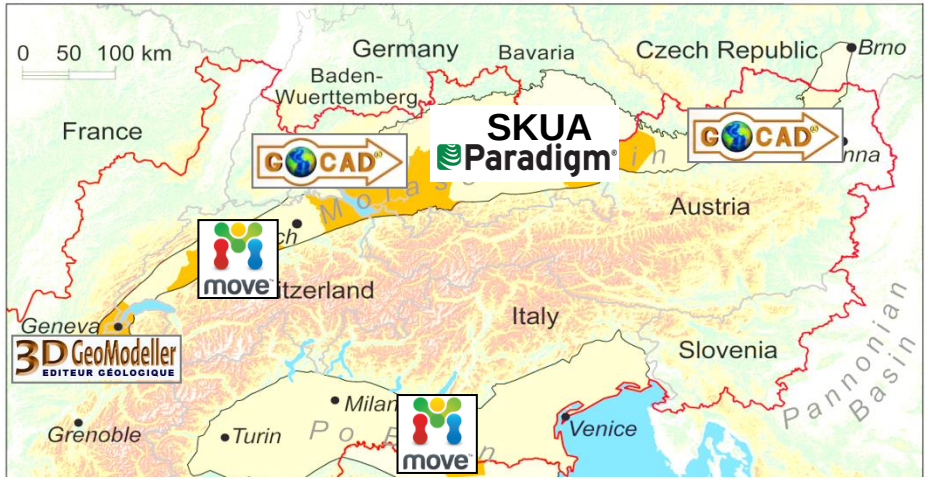
- **15 State Geological Surveys**
- **2 Federal Agencies**
- **GPDN Consortium**
- **GFZ + Universities**

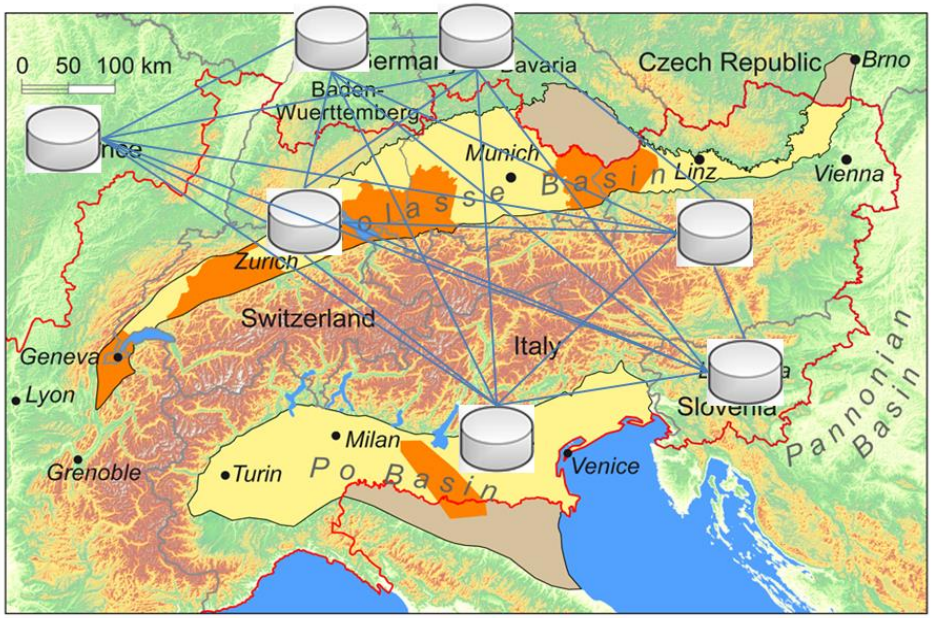


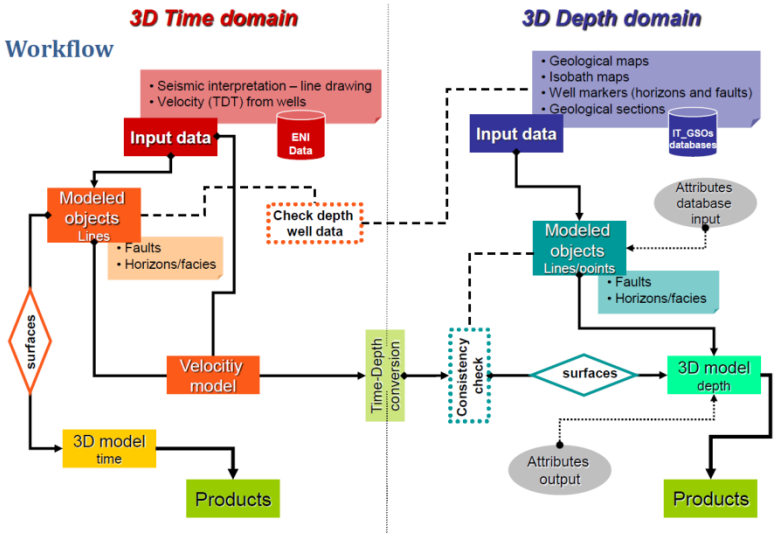
http://www.infogeo.de/home/3D-Modelle/

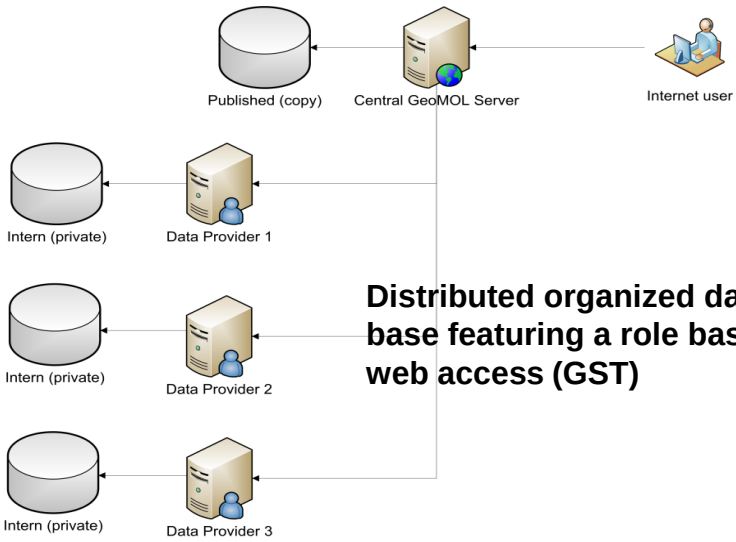
GeoMol

Assessing subsurface potentials of the Alpine Foreland Basins for sustainable planning and use of natural resources









Distributed organized data base featuring a role based web access (GST)

http://www.geomol.eu/3dexplorer/

Staatliche Geologische Dienste Deutschlands

3D interoperability for whom & what for?

Some objections from the Advocatus Diaboli

- GSOs have a national/regional mandate rather than an overarching
  → mutual cross-border exchange of 3D models is practiced for years
- many 3D geological models comprise confidential industrial data
  → dissemination of 3D information is subject to different statutory provisions – from total non-disclosure to full disclosure
- 3D geological models allow for back-engineering of classified data
  → distribution and use outside the legally mandated GSO is not possbile unless regulated through a licensing system
- the cross-domain user community requires solutions not data
  → non-geoscientists cannot exploit the merits of a 3D model and prefer 2D or 2.5D frozen state information (e.g. map series)
  → 3D geological information must be completely coherent and easy to understand

Staatliche Geologische Dienste Deutschlands

GeoMol

Assessing subsurface potentials of the Alpine Foreland Basins for sustainable planning and use of natural resources

Alpine Space

3D Geologie | 2D Geologie

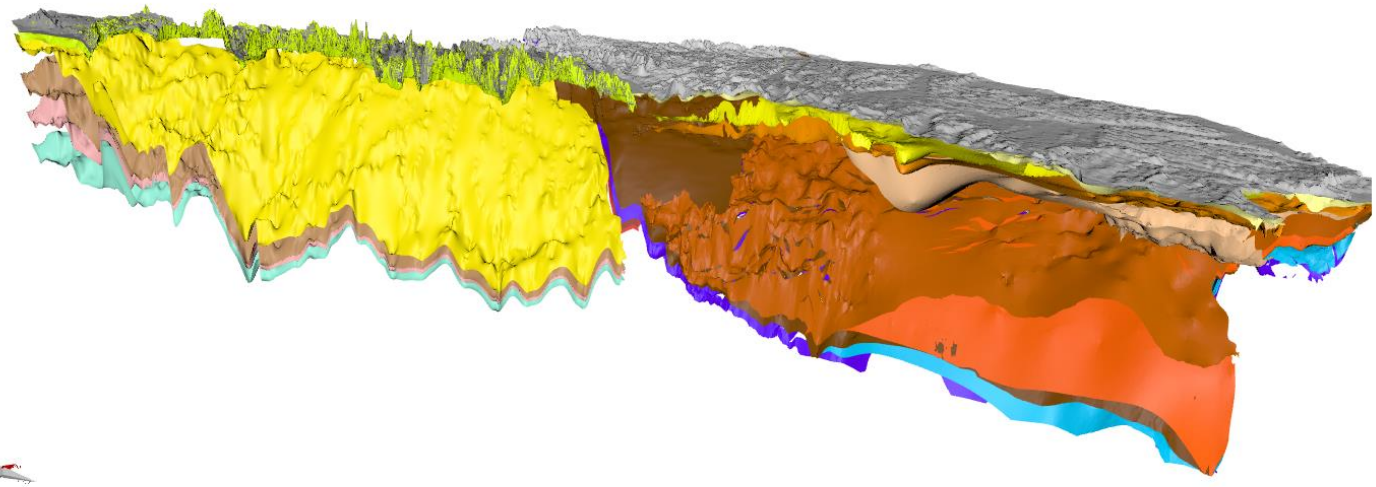
Deutsch

Model Ansicht | Feature Ansicht

- Baden-Wuerttemberg
  - Topography
  - Horizons
    - 01 Base Quat
    - 02 Base Uppe
    - 03 Base Uppe
    - 04 Base Youn
    - 05 Base Tertia
    - 06 Top Middle
    - 07 Top Upper
    - 08 Top Triassi
    - 09 Top Basem
  - Faults
- Slovenia
- Italy
- Austria
- Bavaria
- Server Swisstopo
  - Switzerland
    - Topography
    - Faults

Loading: 19

Does the user appreciate that ??



THEMEN

Standard

NAVIGATION IN DER 3D SZENE

Drehen
Verschieben
Zoomen

Hochwert: 4959675.884222138
Rechtswert: 648439.9374603139
Orthogonale Höhe: -2172
Koordinaten System: EPSG:32632

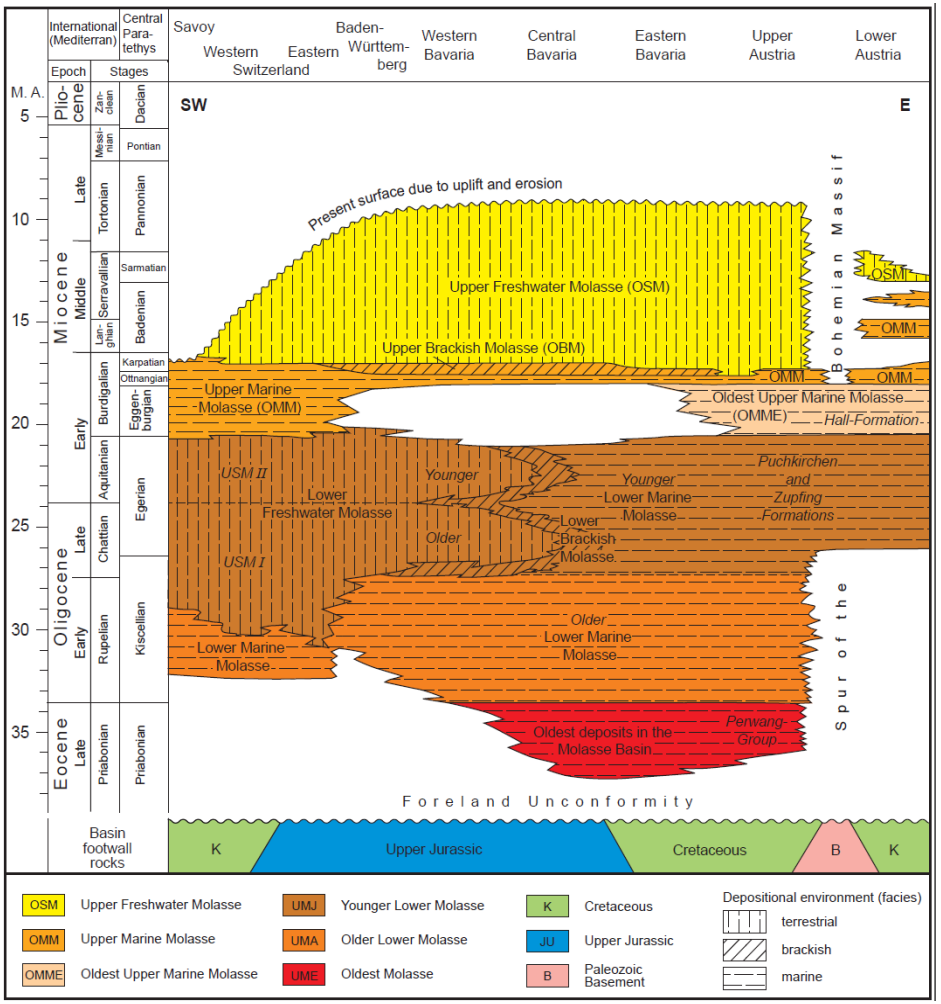
GeoMol is funded by the Alpine Space Programme as a part of the European Territorial Cooperation 2007-2013

Contact Login (derzeit als öffentlicher Nutzer eingeloggt)

Staatliche Geologische Dienste Deutschlands

- Semantic harmonization
  → “geometric” harmonization
- Common data model
  (meta data and code lists)

	A	B	C	D	E	F	G	H	I	J
1	Liste 3D Einheiten									
2	Die Tabelle „3D Einheiten“ umfasst alle in den SGD 3D-Modellen verwendeten Schichtbezeichnungen - unabhängig davon, ob in den 3D-Modellen Top (t), Basis (b) oder Volumen (v) modelliert wurden.									
3	Die Tabelle basiert auf der “LastHorizonList”, Stand November 2015 (bis ID 126 unverändert). “neu” sind alternative ID's zur eindeutigen Kennzeichnungen der KSD-Zusätze mit 4-stelligen Zahlen.									
4	List for:	Stratigraphy Code	Stratigraphy List		ID	Eltern-ID	ID neu	Eltern-ID neu	Hierarchie	ChildSequence
5			Stratigraphie Endhorizont	Stratigraphy lastHorizon					0	
117		cb	Kambrium	Cambrian	114	65	114	65	3	112
118		cbF	Furongium	Furongian	115	114	115	114	4	113
119		cb3	Serie3	Series3	116	114	116	114	4	114
120		cb2	Serie2	Series2	117	114	117	114	4	115
121		cbT	Terreneuvium	Terreneuvian	127	114	127	114	4	116
122		pr	Proterozoikum	Proterozoic	118	0	118	0	1	117
123		np	Neoproterozoikum	Neoproterozoic	119	118	119	118	2	118
124		npII	Ediacarium	Ediacaran	120	119	120	119	3	119
125		npII	Kryogenium	Cryogenian	121	119	121	119	3	120
126		npI	Tonium	Tonian	122	119	122	119	3	121
127		mp	Mesoproterozoikum	Mesoproterozoic	123	118	123	118	2	122
128		pp	Paläoproterozoikum	Paleoproterozoic	124	118	124	118	2	123
129		ar	Archaikum	Archean	125	0	125	0	1	124
130		nb	nicht eingestuft	unclassified	126	0	126	0	1	125
131	Ergänzung Schleswig-Holstein:									
132	TUNB / GTA	tqR	Rupelium		127	17	1001	17	6	126
133		tpao	Oberpaläozän		128	19	1002	19	6	127
134		qhW	q-Holozän-Weichsel		129	3	1003	3	4	128
135		qpW	qp-Weichsel		130	8	1004	8	5	129
136		qpS	qp-Saale		131	8	1005	8	5	
137		qpE	qp-Elster		132	8	1006	8	5	
138		qpWS	qp-Weichsel-Saale		133	8	1007	8	5	
169		tLBta	Bastrup/Ribe-Sande (statt UBKS, v. A. im nördl. SH)		164	15	1038	15	6	
170		tL6fs	Vierlandfeinsande (VFS)		165	15	1039	15	6	
171		tH7ugt	Unterer Glimmerton (UGT)		166	15	1040	15	6	
172		talt	Alt Tertiär		167	12	1041	12	4	
173		taltL7nc	Neochatt/Chatt-Feinsande		168	17	1042	17	6	
174		taltHSol	Rupelton / Chatt-Schluffe		169	127	1043	1001	5	
175		taltLSol	Neuengammer Gassand, Rupelbasissand		170	17	1044	17	6	
176		taltHL5ep	Eozän-Paläozän, Schluff/Ton, Sandsteine		171	12	1045	12	4	
177	Ergänzung Molasse / GeoMol			Zusammenfassung von:						
178	BY + B-W		Steinhöfe-Formation		172	23	1046	23	6	
179			Baltringen-Formation		173	23	1047	23	6	
180		OMME	Älteste Obere Meeresmolasse		174	23	1048	23	6	
181			Tonmergelschichten (UMM)		175	26	1049	26	6	
182		UME	Älteste Ablagerungen im Molassebecken		176	20	1050	20	5	
183			Impressemergel-Formation / Untere Mergelkalke		177	44	1051	44	5	
184		R-JL	Rhätolias	51+54	178	27	1052	27	5	
185			Trias w/- Rhät	55+56+57+61	179	47	1053	47	5	
186			Heilbronn-Formation		180	59	1054	59	7	
187		pz	Basement	65+7118	181	0	1055	0	1	
188	Ergänzung Bayern									
189		kmF	Trossingen-Fm. (Feuerletten)		182	55	1056	55	7	
190		kmB	Löwenstein-Fm. (Burgsandstein)		183	55	1057	55	7	
191		kmBL+C	Hassberge-Fm. (Coburger + Blasen-Sandstein)		184	55	1058	55	7	
192		kmL	Steigerwald-Fm. (Lehrbergschichten)		185	55	1059	55	7	
193		kmS	Stuttgart-Fm. (Schilfsandstein)		186	55	1060	55	7	
194		kmM+E	Grabfeld-Fm. (Estherien- + Myophorienschichten)		187	55	1061	55	7	
195	Ergänzung Baden-Württemberg									
196		tTM	UMM-Tonmergelschichten (Top)			26	1062	26		
197		tL	Landau-Fm. (Basis)			12	1063	12		
198		tfR	Froidefontaine-Fm. (Basis)			12	1064	12		
203		jmOPT	Opalinuston-Fm. (Top)			45	1069	45		
204		juAK	Arietenkalk-Fm. (Top, Basis)			46	1070	46		
205		mtH	Hassmersheim-Schichten (Top)			58	1071	58		
206		mmD	Diemel-Fm. (Basis)			59	1072	59		
207	Ergänzung Brandenburg									
208		T0	Diskordanzfläche Pleistozän		188	8	1073	8	5	
209		A1	Grenzbereich Oligozän/Obereozän		189	16	1074	16	5	
210		A2	ca. Basis Mitteleozän		190	18	1075	18	6	



Staatliche
Geologische
Dienste
Deutschlands

3rd European meeting on 3D geological modelling, Wiesbaden, June 16th and 17th, 2016

Staatliche
Geologische
Dienste
Deutschlands

3rd European meeting on 3D geological modelling, Wiesbaden, June 16th and 17th, 2016

Wrap-up of demands identified in sessions and break-outs:

- Distributed organized system complying with the disparate legal requirements of the model providers
- Licence based login / retrieval / download
- Standards for the top level meta data (ISO 19115 / 19119, INSPIRE)
- Shared data models for 3D geological models adjustable to the proprietary IT environment / software solutions at the GSOs
- Full sematic harmonization
- Standard code lists for homogenous rendering
- Easy to handle dissemination tools meeting the needs of non-geologists
- Support of the different model viewers for web-based delivery of 3D geological models

Staatliche
Geologische
Dienste
Deutschlands

Europe’s 3D geology community

is eager to contribute!