Images of geologic structures served by a relational digital image database

The image database DIoGeneS (**D**igital Images **o**f **Ge**ologic & **n**ic**e** *S*tructures) Introduction provides an open web based portal that allows finding images of geological structures held by the database. Initiated as an online reference collection for studies done at the Geological Institute, ETH Zurich, it has grown to a database with following aims: o to simplify structural identification, o to serve the international geologists community as an interactive archive and or to provide relevant information on individual structures. \leftarrow WWW – EDITOR Geologist (Research) Geologist (Teaching) / School teachers udents (Learning) DATABASI Image access All attributes can be searched with their specific keywords (e.g.: Boudin, Fabric, Fault Fold, Foliation, Joint, Layering, Lineation, Mylonite, Shearzone, Striae, Unconformity ... in the attribute structure) **DIoGene**5 Fast access: Shows all (or last 20, 10, 5 added) thumbnails without any query (download time depends on the number of images held). Show last 5 Show last 10 Show last 20 Show all Query: To search the database do the following: Limit the category by an expression given in the pull-down-menu or leave it blank if you don't want to limit the Click the checkbox of the category which should be listed in the result table (only two categories are listed in the result table). If you don't sort any category, the results will be sorted by default by "natural / experimental" and sort limit to category category natural / experimental 📃 natural geological area [earch description primary / secondary rock type structure overprinted structure [Submit Specify Reset Example: You are looking for images of natural mesoscale Structures in magmatic rocks and you want the result table sorted by primary and secondary structures (like primary folds, secondary faults ...). Limit the "natural / experimental" category to natural, limit the "scale" category to meso, limit the "rock type" category to magmatic and click the checkboxes of the "primary / secondary" category and "structure" category. Additionally you can search the description by typing any string (Example: search description = tectonic. The result is limited to images containing the word "tectonic" in the description Datasets can be alternatively searched by geological area and free text search for words in the description. $\overline{\mathbf{0}}$ Contributions to the database are accepted from Submission form everybody in the geologist community and can be done by electronic submission to the editorial board that ensures the quality of images/structures. If you have an image of a very nice geological structure (also sedimentary structures are welcome!) and you want to share it with the community or students, please feel free to submit it to DIoGeneS. Submission of the images is done in a few steps only. 1) Upload the image as TIFF or JPEG. You can also provide a sketch 2) Fill the Submission Form. structure subtype 2 explaining the structure. ructure subtype structure subtype 4 If your structure doesn´t fit to Image submission: the existing classification, you Submitted images will be reviewed by the Editors. The image owner will be notified in case of acceptatio are free to add new attributes. The submission is done in 2 steps: n. Please select (Browse...) the image (required) and sketch (optional). Press "Upload File" Please provide a detailed it the [Browse] button to find the file on y Please don't submit images larger than 5 MB! description of the structure. Description: Browse... Published images will be cited. Sketch (optional): Browse ... Submission Upload File NOTE: Please be patient, you will not receiv

DloGene Digital Images of Geologic & nice Structures





geological area

search description

(orientation)

(interpretation)

(feature characteristics)

Specified Query

natural / experimental

primary / secondary

overprinted structure

ructure subtype 1

tructure subtype 2

structure subtype 3

bmit Reset

tructure subtype 4 🔲

lithology

rock type 🗹

category by

scale 🔲 mes

structure 🔲 Fold

System Administration: Webmaster ETH

The query can be specified

by defining the attributes

for shape, orientation,

feature characteristics and







o DIoGeneS (www.diogenes.ethz.ch) provides a practical and open way of identification of geor structures for students and it is an interactive archive with relevant information on individual struct teachers and the international geologist community.

For published images, please, use the original reference as indicated in the database field "Published". For unpublished images please the copyright owner. If you publish images based on DIoGeneS, we would be grateful if you could acknowledge our effort, by citing DIo

The copyright of the DIoGeneS webpage is held by the publisher. Further distribution, use or storage is prohibited. The image belongs to the image owner and photographer. Please, do not reproduce any image or related information without written permissi

We would like to thank Jörg Bollmann for providing the concept of an image database and Ulrich Wortmann for help and some source theW3Implementation (EMIDAS).

Copyright © 2002 by DIoGeneS

Publisher: Jean-Pierre Burg Editors: Jean-Pierre Burg / Gerold Zeilinger and any member of the group and any contributor cons

DloGeneSAdministration:www_diogenes@web.ethz.ch

		7
7		1

ische Technische Hochschule Zürich wiss Federal Institute of Technology Zurich





The database contains today approx. 120 images of geological structures. The strength of this database, compared to search engines, is that the images contain various geological attributes and consequently they are easy to find by

Main attributes are scale, genetic (natural or experimental structure), timing (primary or secondary structure), rock type, structure and overprinted structure. Additional attributes are shape, orientation, feature characteristics,

089.	chevron close dome gentle
structure subtype 1 (shape) —	isoclinal kink non-cylindrical open parallel tight
structure subtype 2 (orientation) ————	curved hinge gently inclined moderately inclined recumbent steeply inclined steeply plunging upright
structure subtype 3 (feature characteristics) –	axial plane cleavage closed structure crumpled zone disharmonic downward facing flexural slip fold axes hinge-parallel veins interference pattern kink bands M fold parallel S fold segmented fold axis vertical axial plane
structure subtype 4 (interpretation)	Z fold

The location of the images is shown in a map/satellite view. In addition all images are available as a Google Earth overlay categorized by the main categories.

search description	Content of the Wildow Content of
any word	October 2009: Link of months by Open University
structure subtype 1	August 2002. Launch service
Fold: interlimb angles in profile, the smaller angle made by the limbs of a fold is termed the inter-limb angle, a measure of the tightness of the fold. It is the angle subtended by the tangents at two adjacent inflection points, which may reflect the intensity of compression. A qualitative classification is based on the minimum angle between the limbs, separating five tightness classes:	This is the news section DioCience. Check here for latest news. Your DioCienceS Team
gentle (180 to ca. 120°) spen (120-70°). (lose (70-30°). light (less than 30°) and soclinal (o°, i.e. parallel limbs).	
Fault (brittle) + Shear zone Faults are classified according to the direction of the relative movement between fault blocks, which is related to the type of stress causing the fault. Three basic types of faults are recognised:	
Strike slip faults A fault with dominant horizontal movement parallel to the fault plane is called a strike slip fault. A fault involving relative displacement parallel to the dip of the fault plane is a dip slip fault. Strike slip faults usually have very steep or vertical dips and are then referred to as transcurrent faults or wrench faults. A large transcurrent fault that terminates in another large structure is called a transfer fault.	
B reducing	

ological ures for	Contributors to database:
uresjor	1. Abbas Bahroudi
	2. Andrea Cozzi
	3. Annette Kimmich
	4. Bas den Brok
se contact	5. C.J.L. Wilson
loGeneS.	6. Erwan Le Guerroué
	7. Felix Gnehm
	8. Fernando Ornelas Marques
copyright	9. Gerold Zeilinger
sion of the	10. Hugo Bucher
	11. Jean Marcoux
	12. Jean-Pierre Burg
	13. Joseph P. Kopera
ce-code in	14. Luigi Burlini
	15. Michael Maxelon
	16. Michal Bystricky
	17. Pierre Gautier
	18. Ralf Hetzel
titute the	19. Sandeep Singh
	20. Sergey Ziabrev
	21. Stefan Heuberger
	22. Stefan Schmalholz
	23. Stéphane Herbreteau

Content

Conclusion