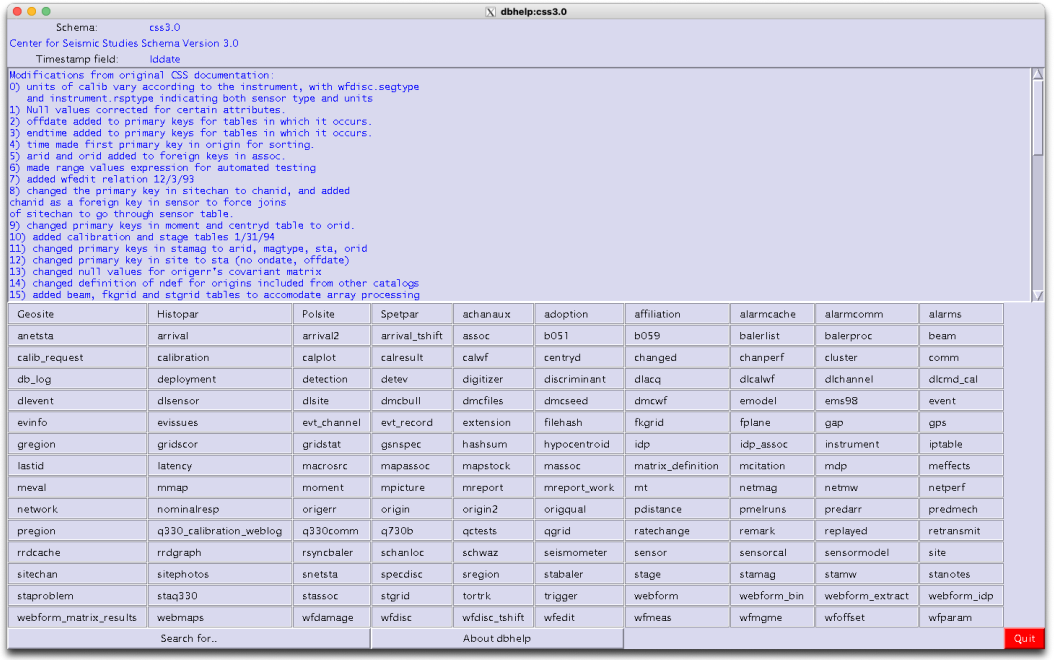
European Antelope Users Group 2023 – Vienna, Austria

GeoSphere Austria

Antelope databases

a few thoughts



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schema basics

schema is made up of
- attributes
  - name, type, format
  - units, range, null, description, detail optional
- relations
  - name, fields
  - primary, alternate, foreign keys optional
  - defines, separator, description, detail optional

rules for schema definition unclear
what are the rules for Units, Range,…?

definitions possible in files at various locations
$ANTELOPE/data/schemas/<schemaname>
$ANTELOPE/data/schemas/<schemaname>.ext/*
$ANTELOPE/contrib/data/schemas/<schemaname>
$ANTELOPE/contrib/data/schemas/schemaname.ext/*
$SCHEMA_DIR/<schemaname>
$SCHEMA_DIR/<schemaname>.ext/*

```
Attribute tmeas
        Time (17)
        Format ( "%17.5f" )
        Null ( "-9999999999.99900" )
        Units ( "Seconds" )
        Description ( "epoch time" )
        Detail {
                Epoch time of a discrete measurement
                made on waveform data
        }
        ;
```

same attribute can be defined multiple times
    requires **identical** formatting
previously defined attributes can be used
    how to avoid duplicated definitions ?

error messages sometimes misleading
meaningless definitions possible

schema verification

new utility **check_schema**

iterate over all files that make up the schema

- check attributes
  - null reasonable
  - field sizes make sense
  - type corresponds with formatting and null value
  - ...
- check if attribute definitions identical

if no serious problems so far ↲

iterate over all tables and check if key make sense

- iterate over all relation
  - check if keys make sense
- iterate over all attributes
  - check null values
  - check if attribute is used in any relation

deficits in css3.0/css3.1

etype in origin – should be in event
mb, ml, ms in origin confusing

event info missing – would be nice to have evname/evmag/evurl/evtype various flavours exist in contributed tables

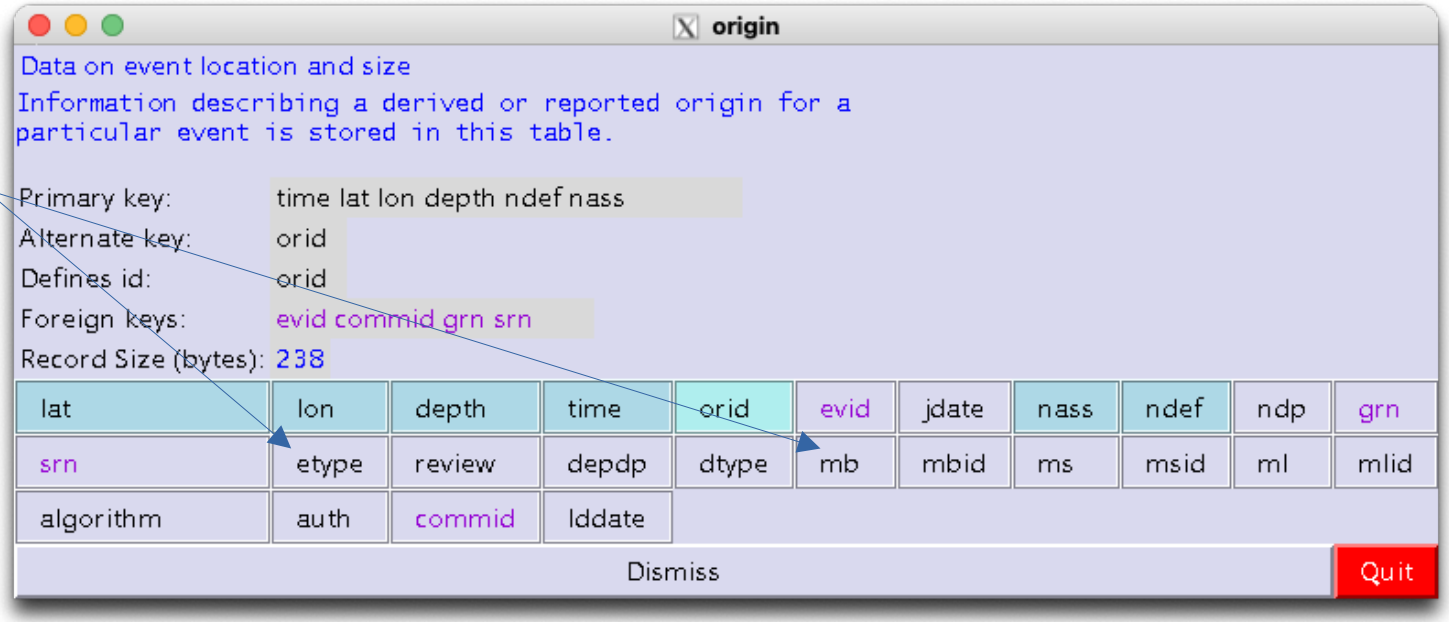
event.evname too short

preferred „magnitude“ missing

no clear „order“ of magnitudes

site/sitechan/sensor/instrument
- note really intuitive
- ondate::offdate ⇔ time::endtime
- sta/chan ⇔ chanid

wfid
- what is it good for?



calibration
- wfdisc.calib
- calibration.calib
- seismometer.calib
- instrument.ncalib

homegrown extensions

evinfo – event info missing in event
- etype
- levname / sevname
- puburl / privurl
- magnitude / magtype / magid

meffects – macroseismic effects
- heard, felt → lights, liquefaction
- specify uncertainites

origqual - origin quality
- mindist/maxdist
- azgap/azgap2
- nsta_def
- nsta30/nsta125 → nsta300

pregion/pdist – cache geographical search results
- join keys: id/id_name
- allows for different types (e.g. city/province)

filehash/hashsum – checkums
- hash
- method
- length

evissues – event issues
- issue
- source of problem
- time checked/fixed
- open/closed

staproblem – site problems
- sta time::endtime
- class
- description

meval/massoc/mdp/mmap/mreport – macroseimic stuff
- multiple evaluations possible
- holds raw felt reports to evaluations

homegrown extensions - continued

extension – generic table for „whatever“
- join on key (key value)
- numeric value / unit
- string

evt_record/evt_channel– triggered waveforms
- time::endtime triggertime
- filename
- channelwise statistics (min/max/...)

Problems
- extensions generally poorly documented
- avoid collision of fieldnames
- each problem a new table → so many tables

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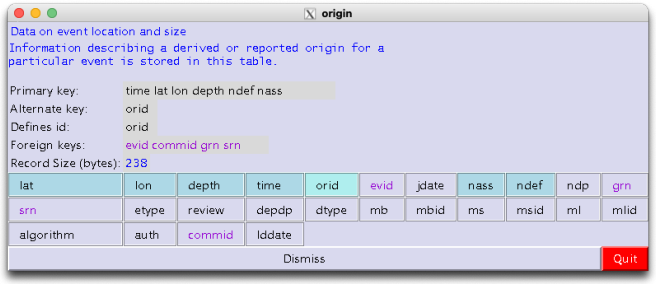
questions? ideas!



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