

New Features in QGIS

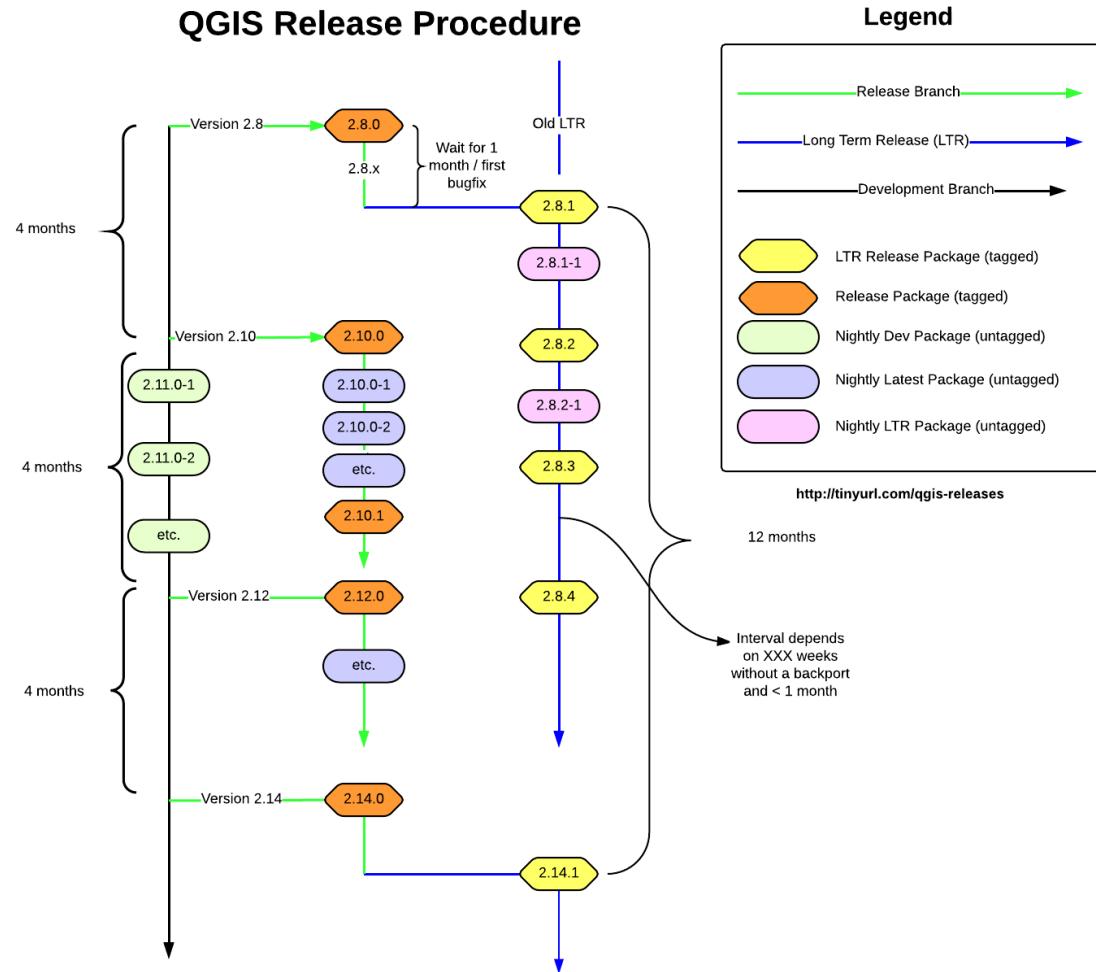


Versions 2.6, 2.8 and 2.10

Marco Hugentobler (Sourcepole) and Andreas Neumann (Stadt Uster)



New Release Model



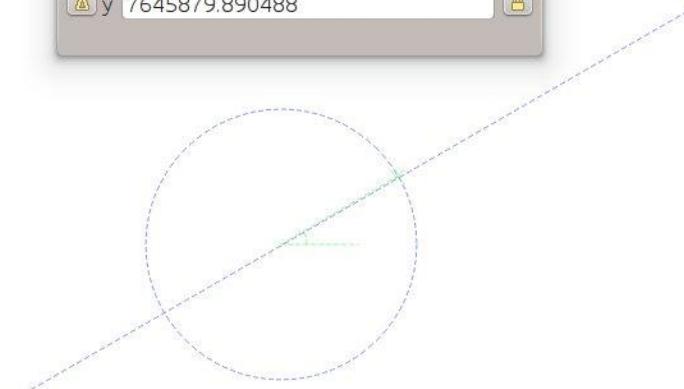
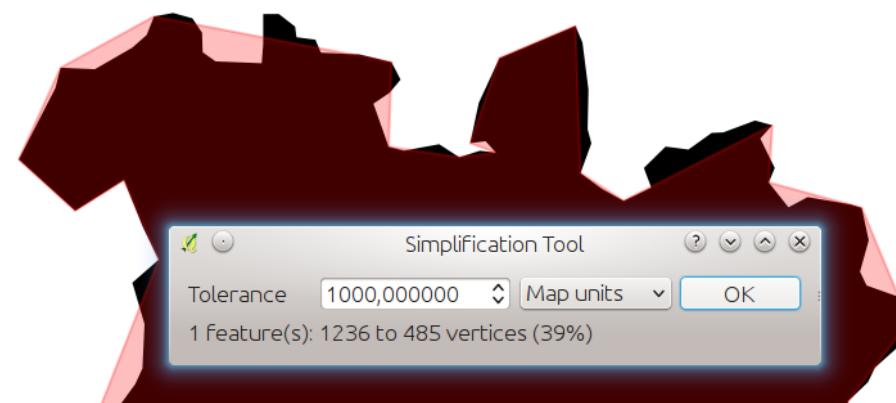
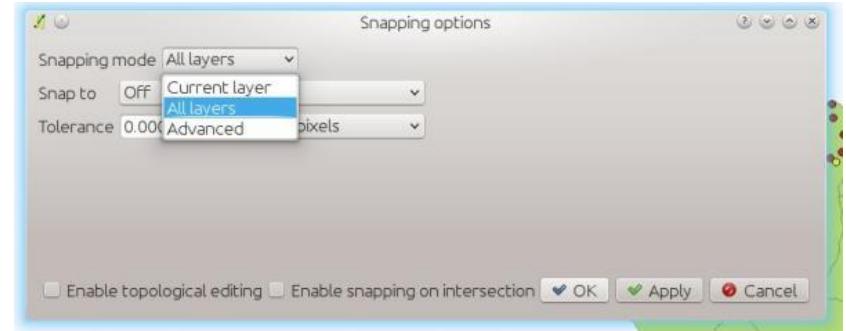
New Release Model

- Time-based regular release every 4 months
- Odd numbers are dev releases, even numbers are regular releases
- 3 months of development, 1 month bug fixing
- Every 4th release is a LTS (long term support) version
- LTS will be supported and receive bug fixes for at least one year
- LTS versions are 2.8 and 2.14
(Feb/March 2016)
- QGIS 2.10 (Pisa) due end of June 2015

Digitizing tools (2.8)

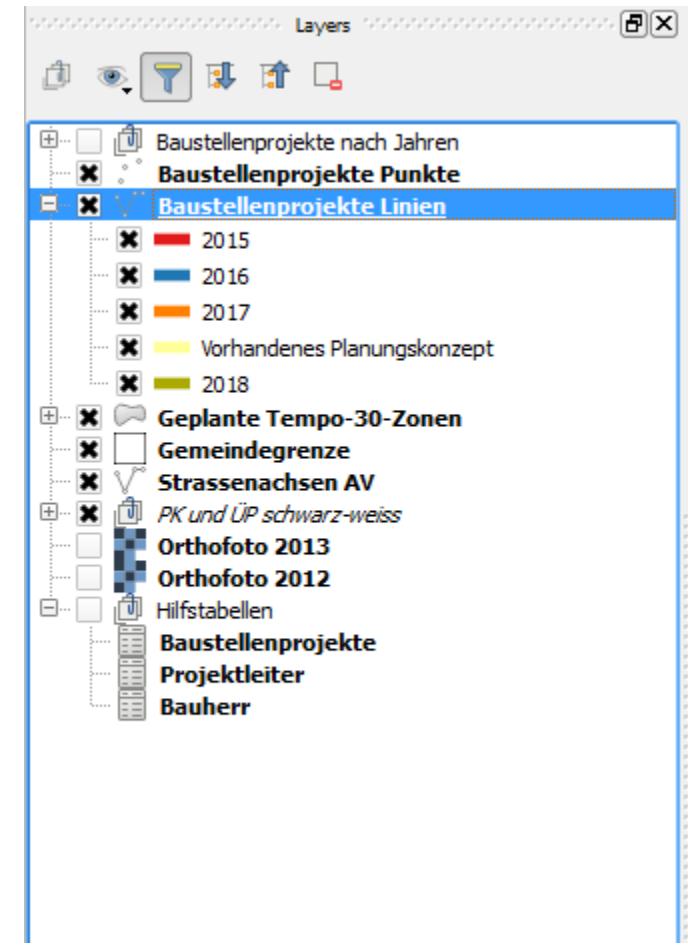
- Improved snapping
- Simplify tool with live feedback
- Advanced “CAD-like” digitizing tool

Co-Sponsored by QGIS-CH, Vevey, Nyon and Tracks for Africa



Legend tree redesign (2.6)

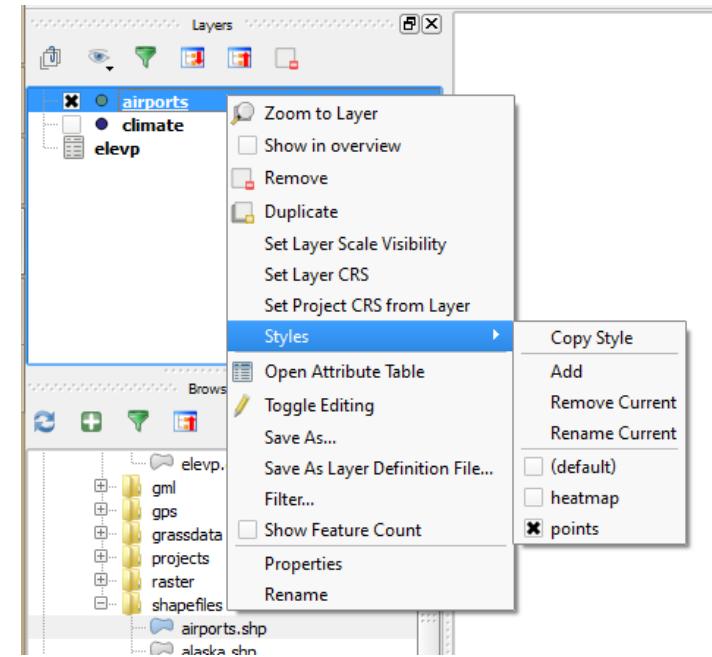
- Complete rewrite of legend tree
- “Pseudo layers” for categories rules within a layer which can be toggled
- Legend can be filtered by visible map content
- Visibility presets for combinations of layer visibility
- Better API for developers



Co-Sponsored by QGIS-CH and SIGE

Multiple Styles per Layer (2.8)

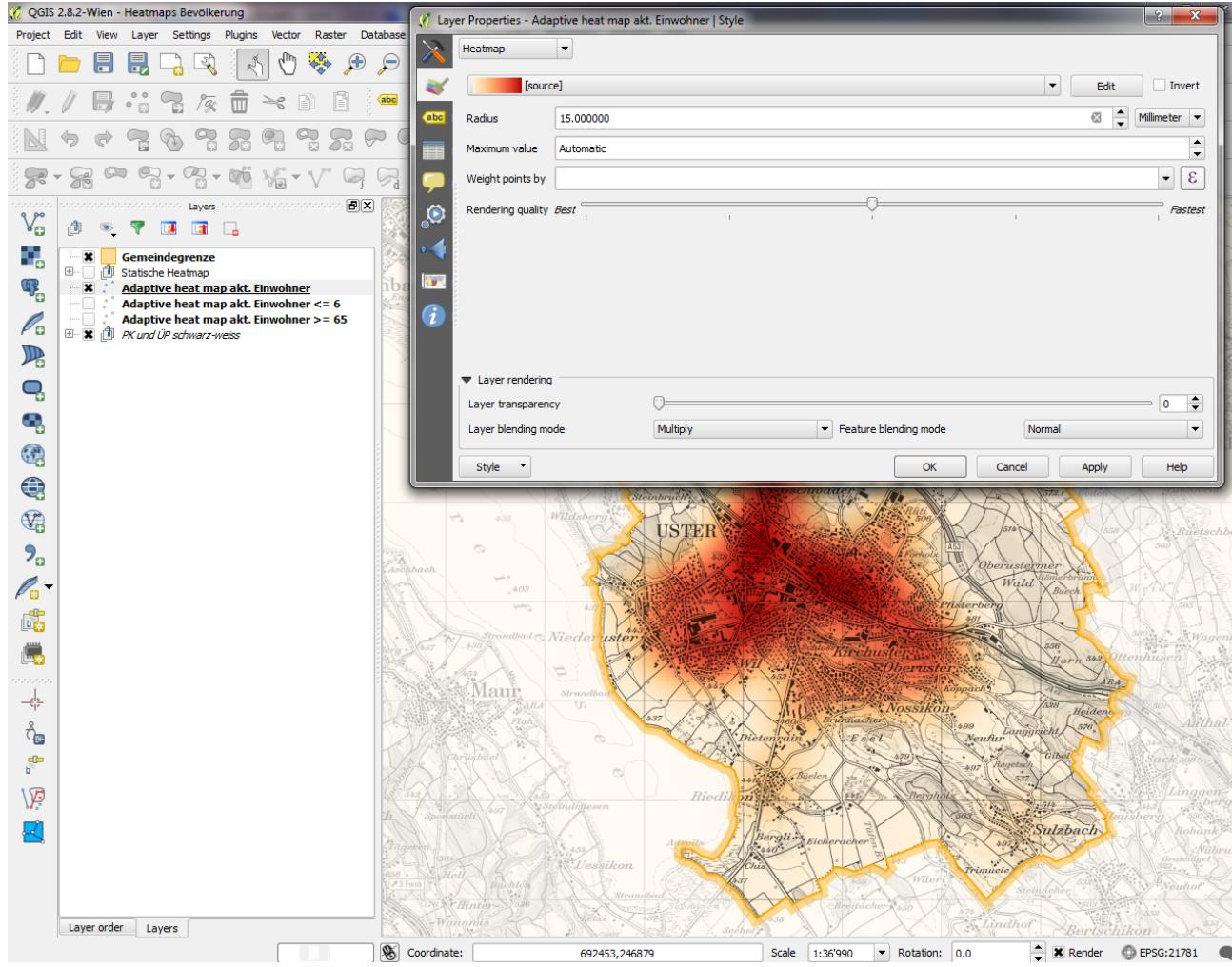
- Not necessary to load the same layer multiple times if you need different views
- Easy switch of different styles on the same layer
- Supported by print composer
- Exposed by QGIS server in WMS service
- Useful to provide black/white and color versions of symbology



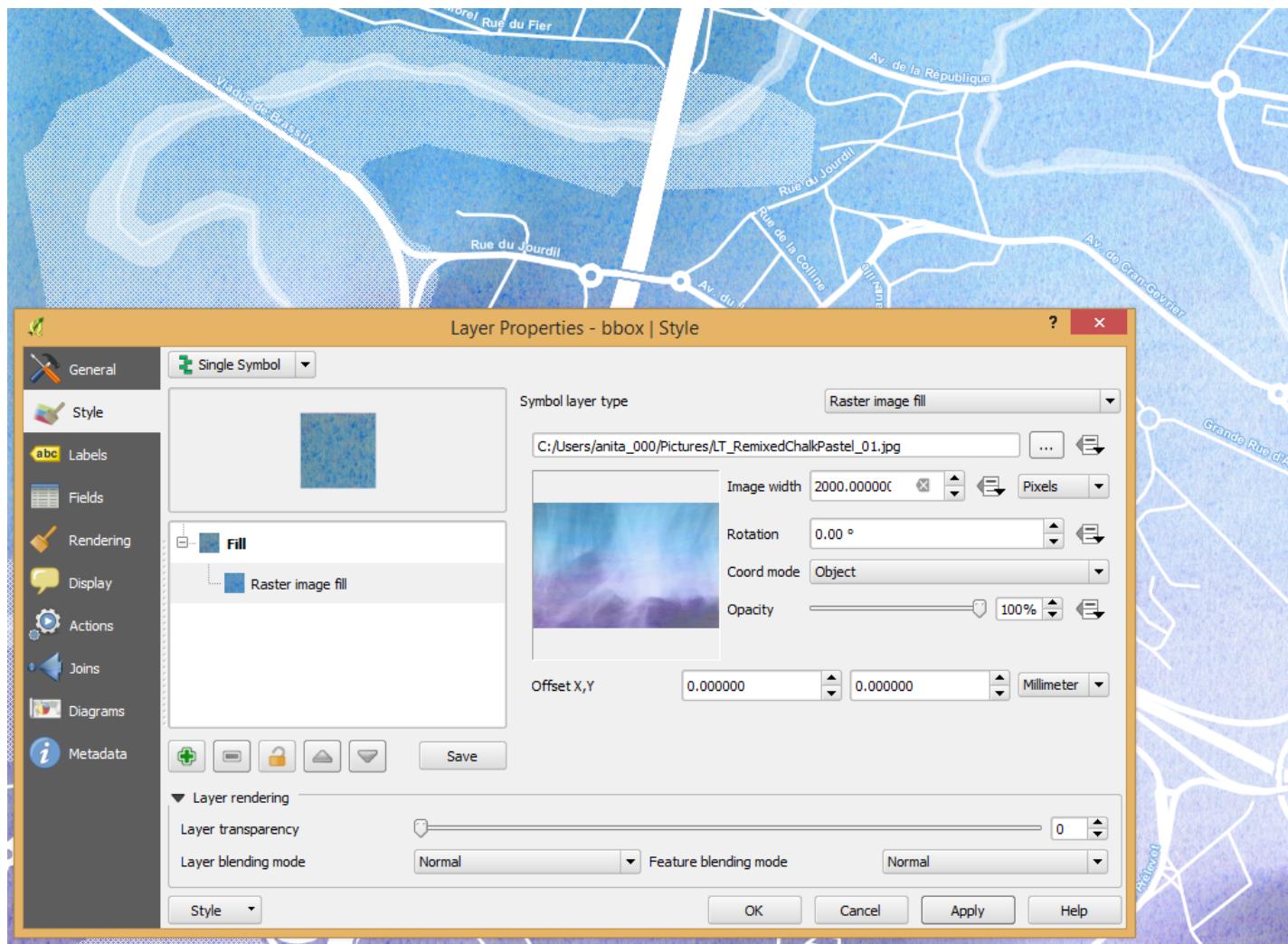
Live Heatmap Renderer (2.8)

- Allows live and dynamic heat map from point data
- Different quality/speed settings
- Possibility to use attributes of expressions as weights

Live Heatmap Renderer (2.8)



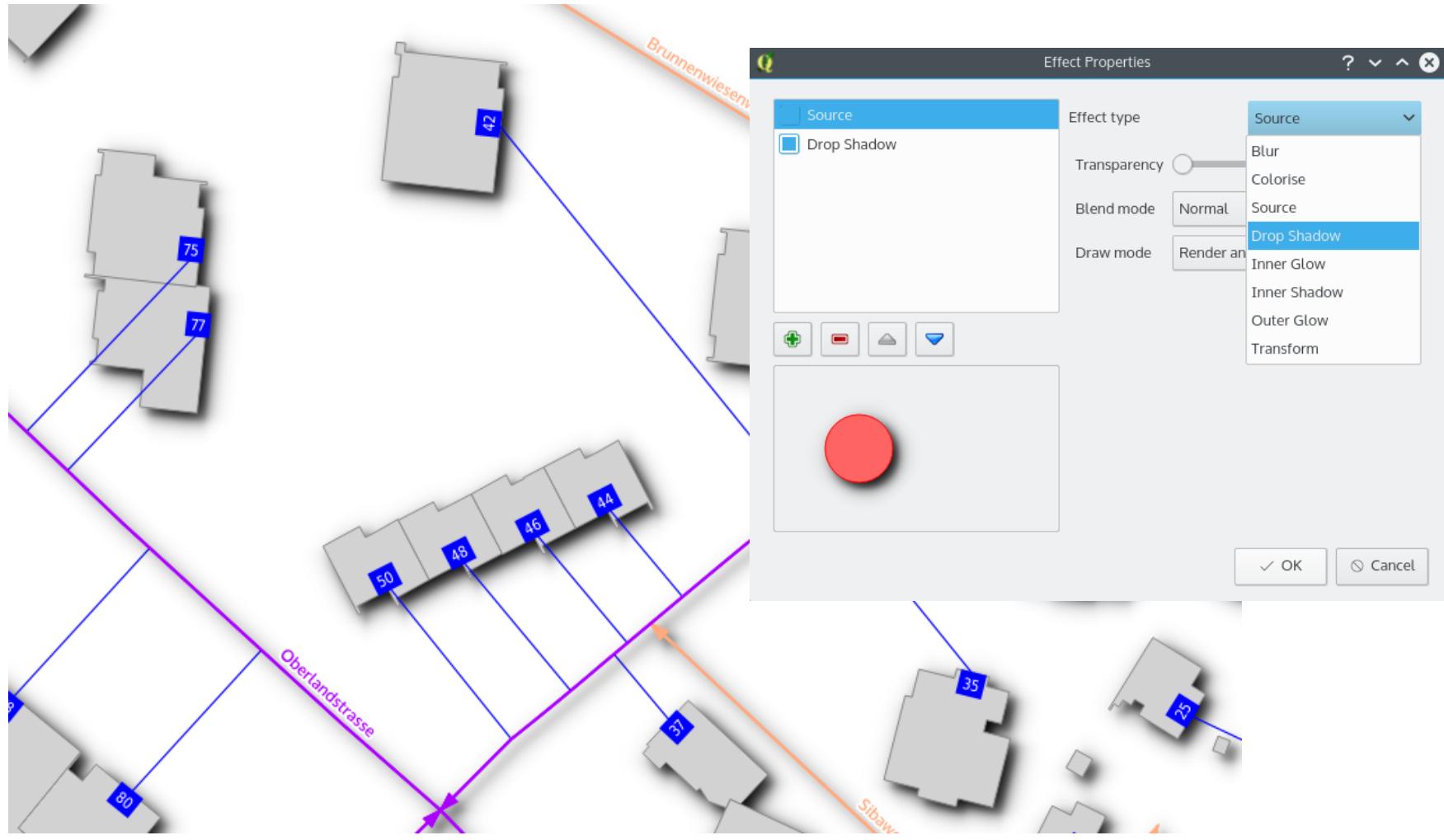
Raster Image Fill Type (2.8)



Live Layer Effects (2.10)

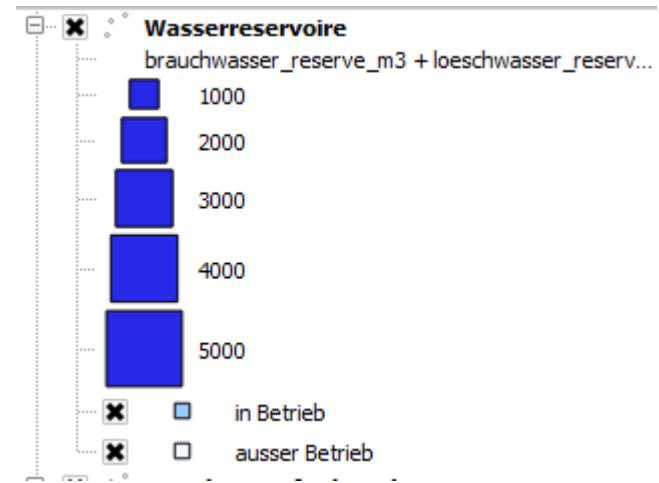
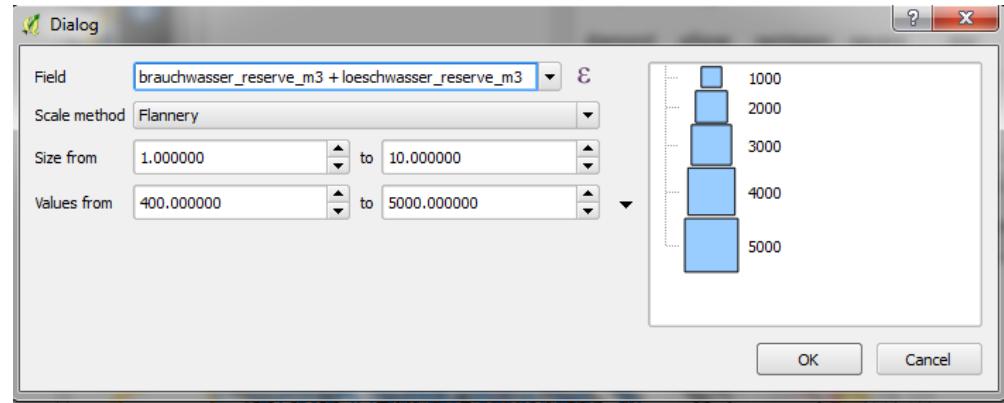
- Applies to all vector geometries of a layer
- Chainable combination of
 - Source
 - Transform
 - Blur
 - Drop Shadow / Inner Shadow
 - Inner glow / Outer glow
 - Colorize
- Combine with transparency and blend modes

Live Layer Effects (2.10)

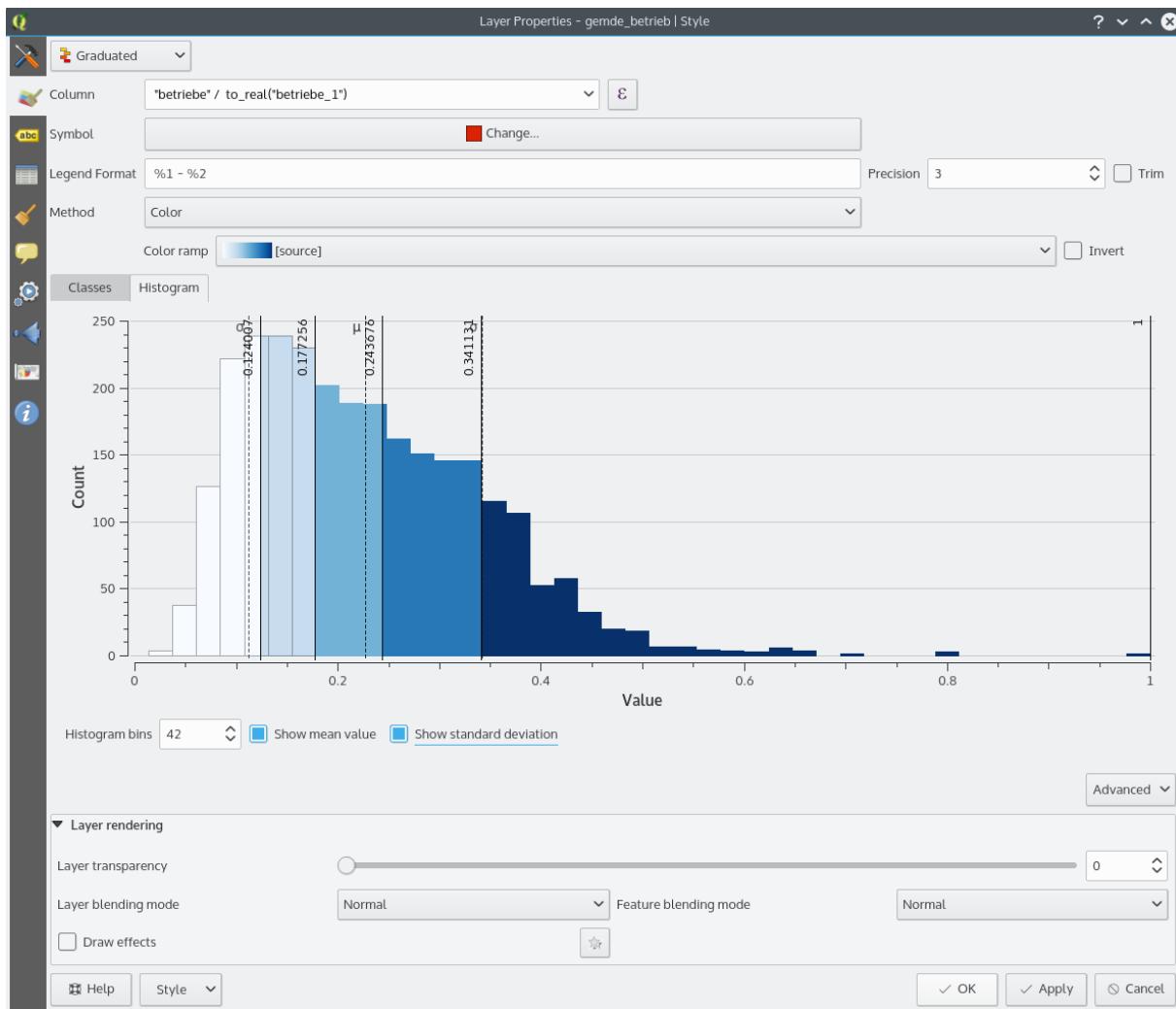


Scaled symbols improvements (2.10)

- Assistant for different scaling modes and mapping min/max to actual sizes
- Legend in legend tree and print composer
- Legend for components of diagrams (without size)



Graduated Renderer Histogram (2.10)



Statistics Summary Panel (2.10)

- Various statistical parameters for all or selected features of a layer
- Total count and count of NULL values
- Improved zonal stats plugin - to generate raster/vector overlay statistics

The image displays two QGIS dialog boxes. The left dialog is titled 'Statistics' and shows a table of statistical parameters for a layer named 'brauchwasser_reserve_m3'. The right dialog is titled 'Zonal Statistics' and shows settings for calculating statistics across zones defined by a polygon layer.

Statistics Dialog (Left):

Statistic	Value
Count	7
Sum	14550
Mean	2078.57
Median	1750
St dev (pop)	1814.99
St dev (sample)	1960.41
Minimum	200
Maximum	4600
Range	4400
Minority	1750
Majority	200
Variety	5
Q1	200
Q3	3800
IQR	3600
Missing (null) values	0

Zonal Statistics Dialog (Right):

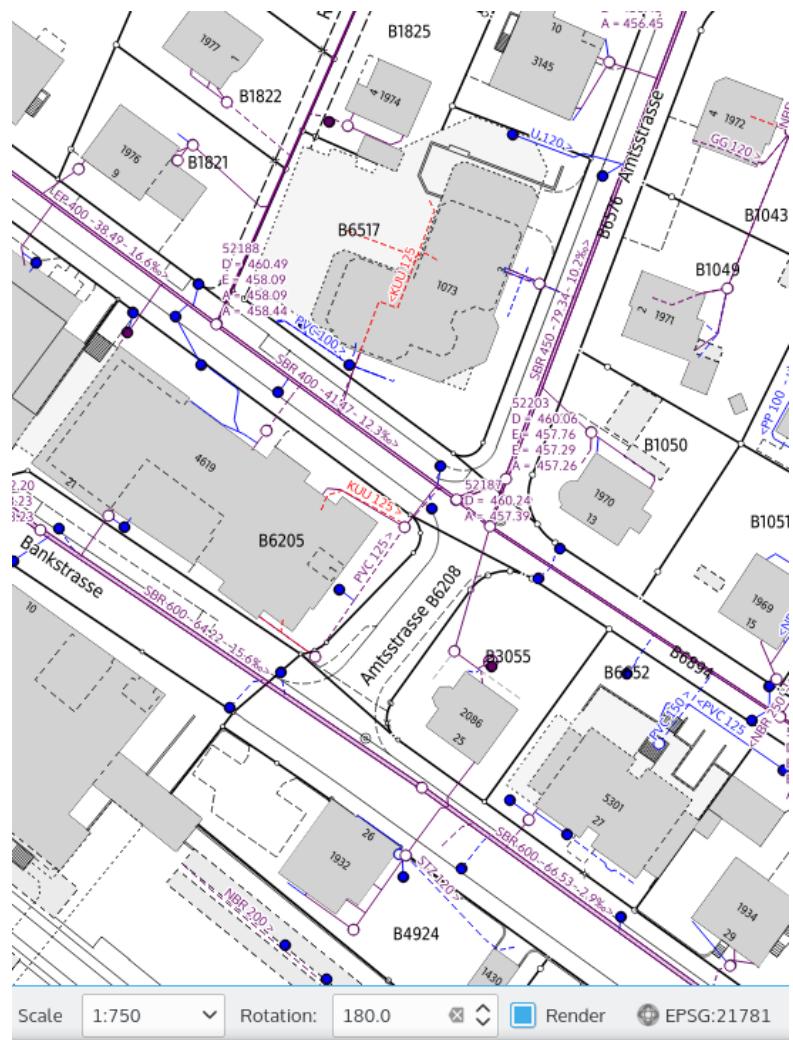
Raster layer: dom_uster_2014
Band: Band 1
Polygon layer containing the zones: gebaeude
Output column prefix: domstat|
Statistics to calculate:

- Count
- Sum
- Mean
- Median
- Standard deviation
- Minimum
- Maximum

OK Cancel

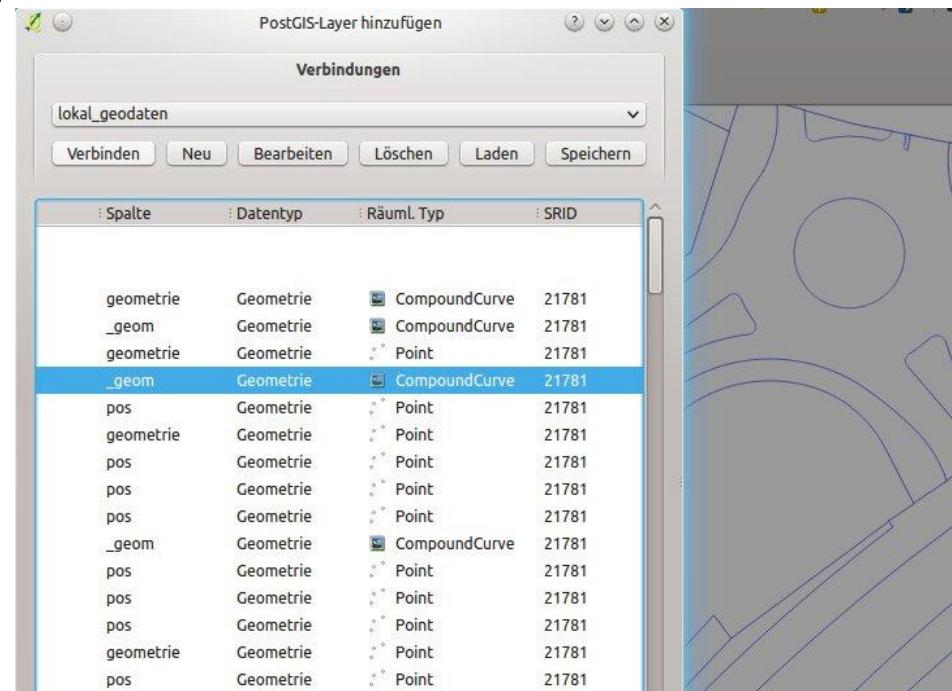
Map Rotation (2.8)

- Labels stay horizontal (when automatically placed)
- Labels don't get upside down if manually placed
- Also used in print composer
- No comfortable interactive map rotation tool yet (only spinbox)



New geometry model (2.10)

- Most new functionality not yet visible for user in 2.10
- 2.10: possibility to display features with curved type
- 2.12: editing of curved geometry types, z/m-values
- More details in the following presentation

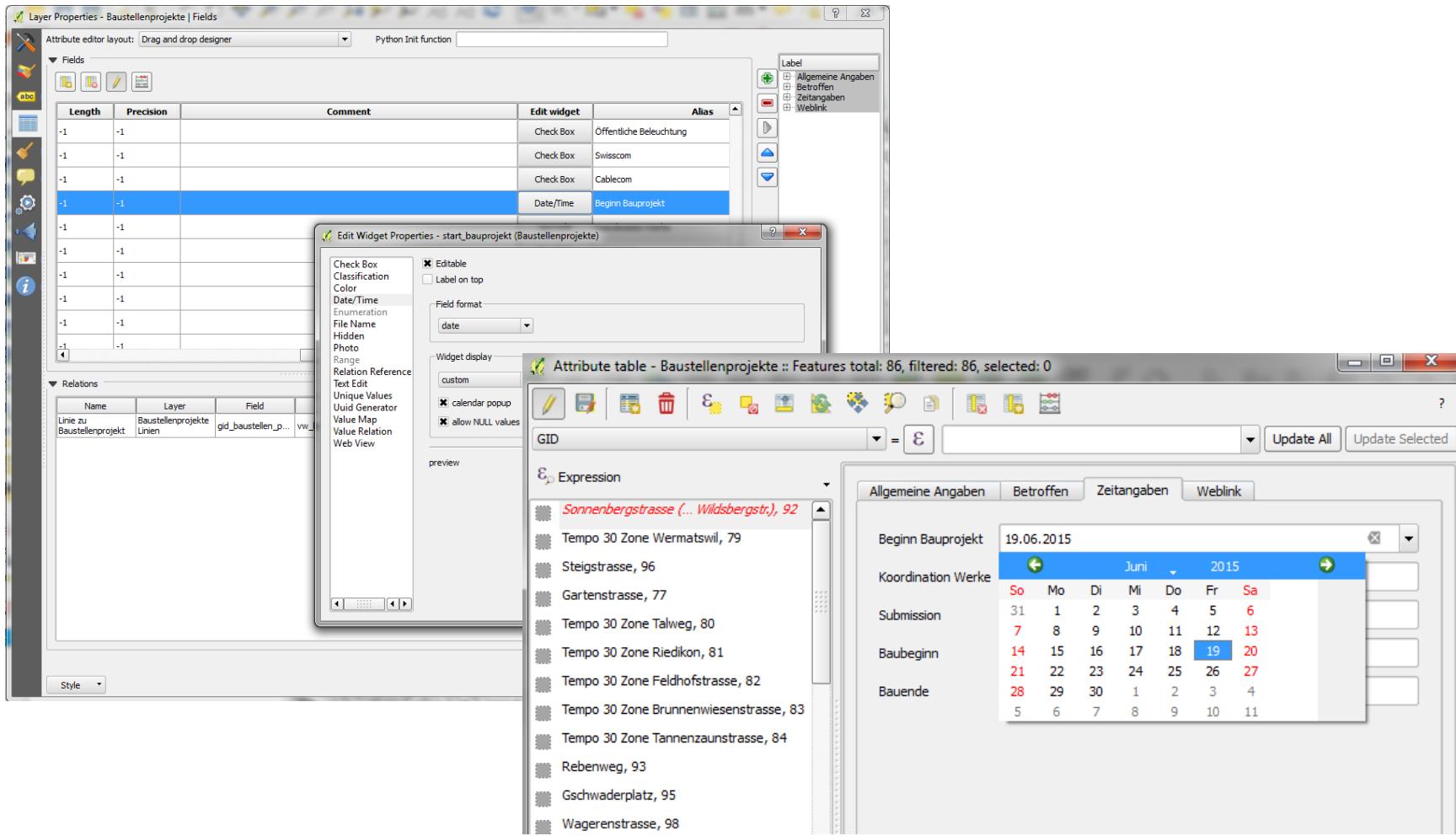


Editor Widget Improvements

- Ongoing effort (2.6 to 2.10)
- Complete rewrite of widgets
- Extensible with custom widgets
- Proper handling of NULL values
- Improved date/time widget
- Improved widget for nested forms (relations)
- Lineedit with autocomplete for value relations (2.10)
- Drill-down filter for value relations (2.10)

Sponsored by QGIS-CH, SIGE and Uster

Date/Time Widget Improvements



Relation Reference Widget Improvements

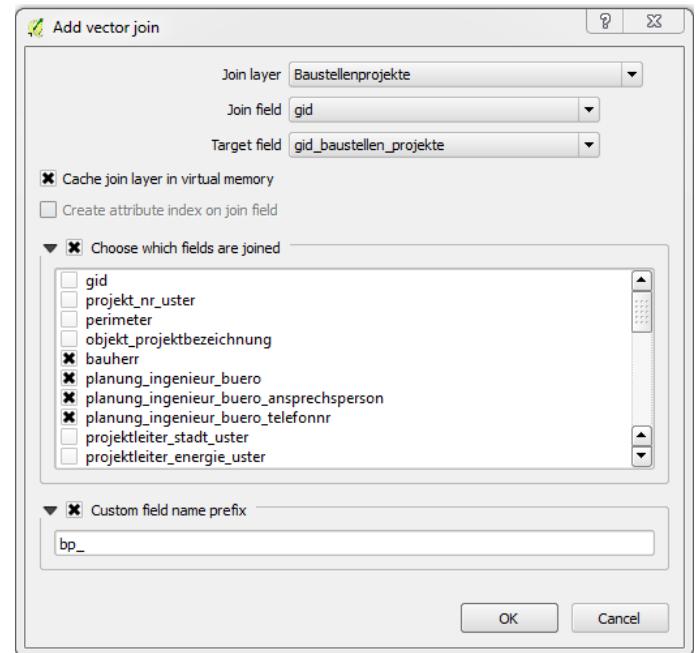
The screenshot illustrates several improvements to the QGIS Relation Reference Widget:

- Edit Widget Properties - gid_baustellen_projekte (Baustellenprojekte Linien):** This dialog shows the configuration for a relation. It includes settings for being **Editable**, **Classification**, **Color**, **Date/Time**, **Enumeration**, **File Name**, **Hidden**, **Photo**, **Range**, **Relation Reference**, **Text Edit**, **Unique Values**, **Uuid Generator**, **Value Map**, **Value Relation**, and **Web View**. The **Display expression** field contains the formula `COALESCE("objekt_projektbezeichnung", "") // ; // "gid"`. Other options like **Allow NULL value**, **Order by value**, **Show embedded form**, **On map identification (for geometric layers only)**, and **Use a read-only line edit instead of a combobox** are also present.
- vw_cover – Feature Attributes:** This dialog shows the attributes for a selected feature. It includes fields for **last_modification** (NULL), **dataowner** (NULL), **provider** (NULL), and **fk_wastewater_structure** (FAA AK572). A red circle highlights the **relation reference icon** (a small square with a diagonal line) next to the dropdown menu.
- Attribute table - Baustellenprojekte Linien :: Features total: 62, filtered: 62, selected: 0:** This dialog displays a list of features and their properties. On the left, a tree view lists streets: Sulzbacherstrasse, Riedikerstrasse, Braschlgasse, Strickstrasse, Südstrasse, Rebenvog, Endweisenstrasse/Stumpenrietweg, Hohle Gasse, Sonnenbergstrasse (Z...tr. - Wildbergstr.), Würrenstrasse, Hallenbadweg/Stadionweg, Steigstrasse, Uferweg, Gerbestrasse, Breitacker-/Schachenweg (Veloroute), Freudwilerstrasse - Belagsanierung, Talweg, Wagenstrasse, Lambergstrasse / Gibelweg, Wermatswilerstrasse, Wermatswilerstrasse UF, Winterthurerstrasse UF, and Hegetsbergstrasse. On the right, the properties for Sulzbacherstrasse, GID 259, are shown in detail. The **Baustellenprojekt** tab is active, showing fields like GID (59), Projekt-Nr Stadt Uster (30290.041), Perimeter, Objekt- oder Projektbezeichnung (Sulzbacherstrasse), Tempo30 Zone (unchecked), Vorhandenes Planungskonzept (unchecked), Betriebs- und Gestaltungskonzept (checked), Projekt-Nr Uster (30290.041), and Objekt- oder Projektbezeichnung (Sulzbacherstrasse).

Show connected features in map if relation is a geometry table

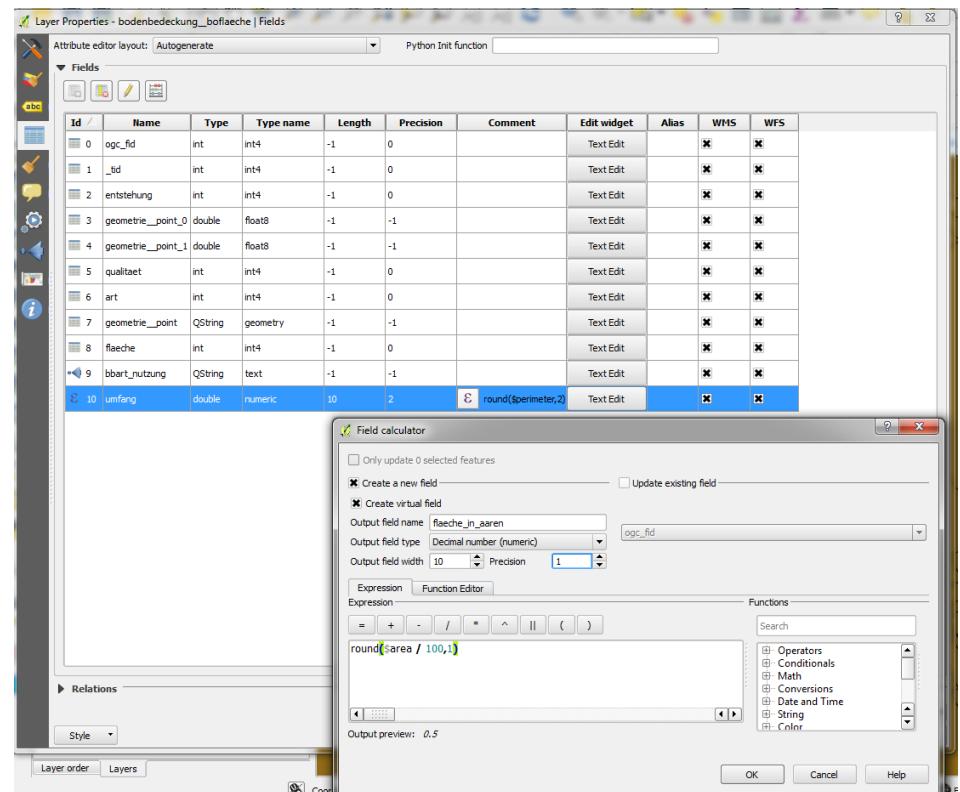
Join Improvements

- Master Layer can still be edited after join and fields added
- Choose which fields are joined
- Choose field name prefix for joined attributes
- Create attribute index on join field (provider dependent)



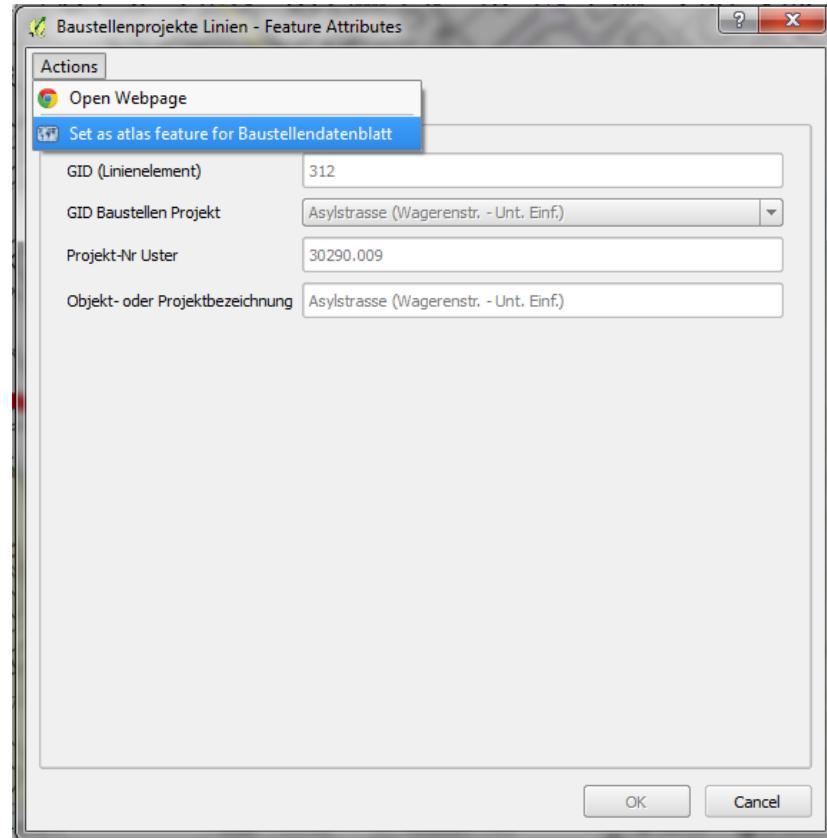
Virtual Fields (since 2.6)

- behaves like database view
- can be used like a normal field, but read-only and automatically updated
- with >= QGIS 2.10 the virtual field definition can also be updated



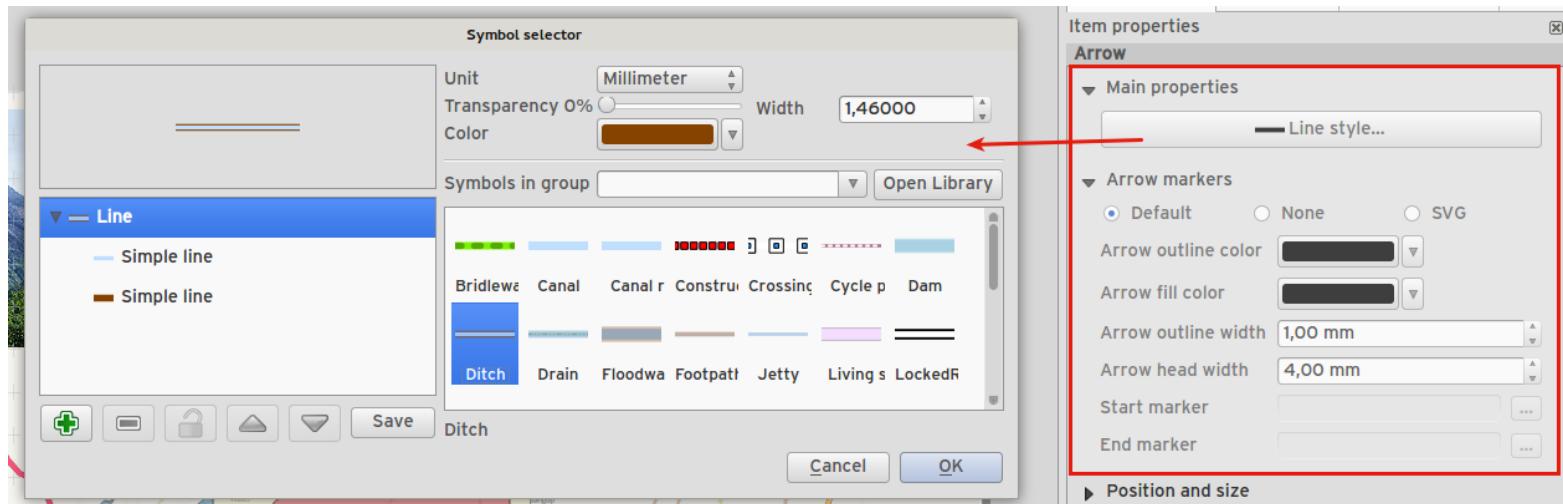
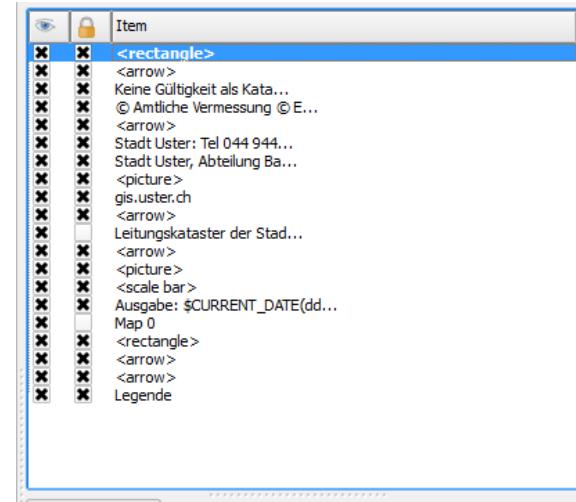
Actions Improvements

- New actions menu in form
- Actions can have icons associated
- New automatic action for opening datasheets (atlas printing) - if layer is used as Atlas coverage layer



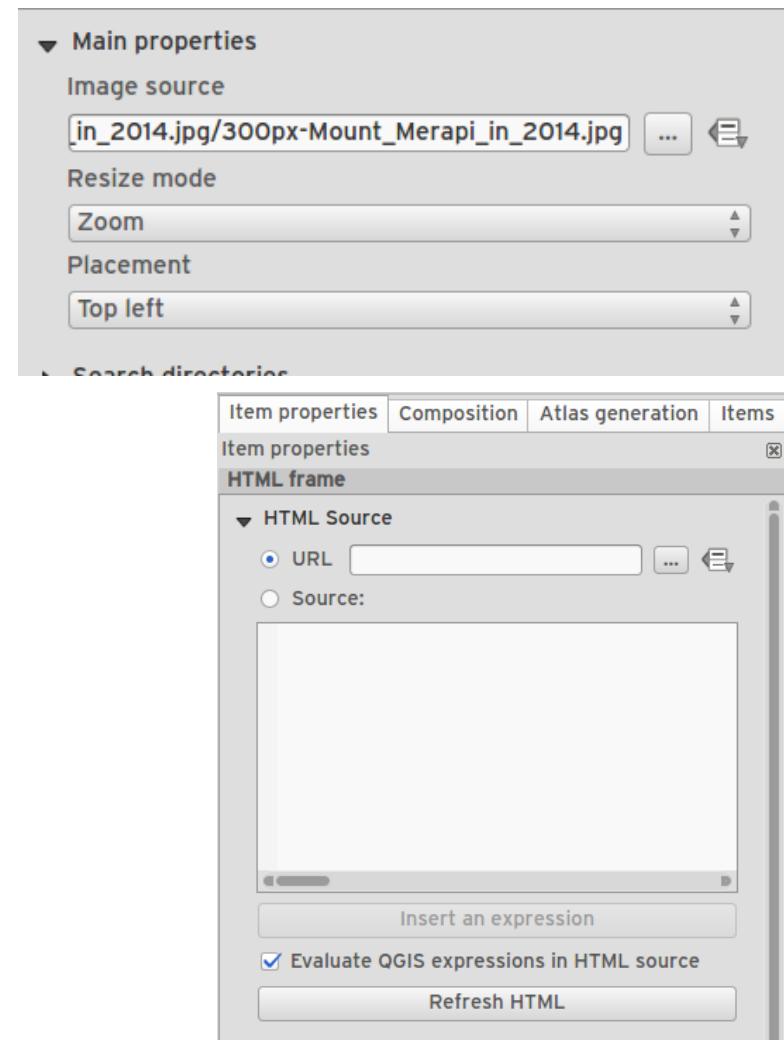
Print Composer Improvements (2.6)

- New item tree to control visibility, editability and reorder/rename elements
- Better styling options for lines/arrows and basic shapes
- More data-defined properties



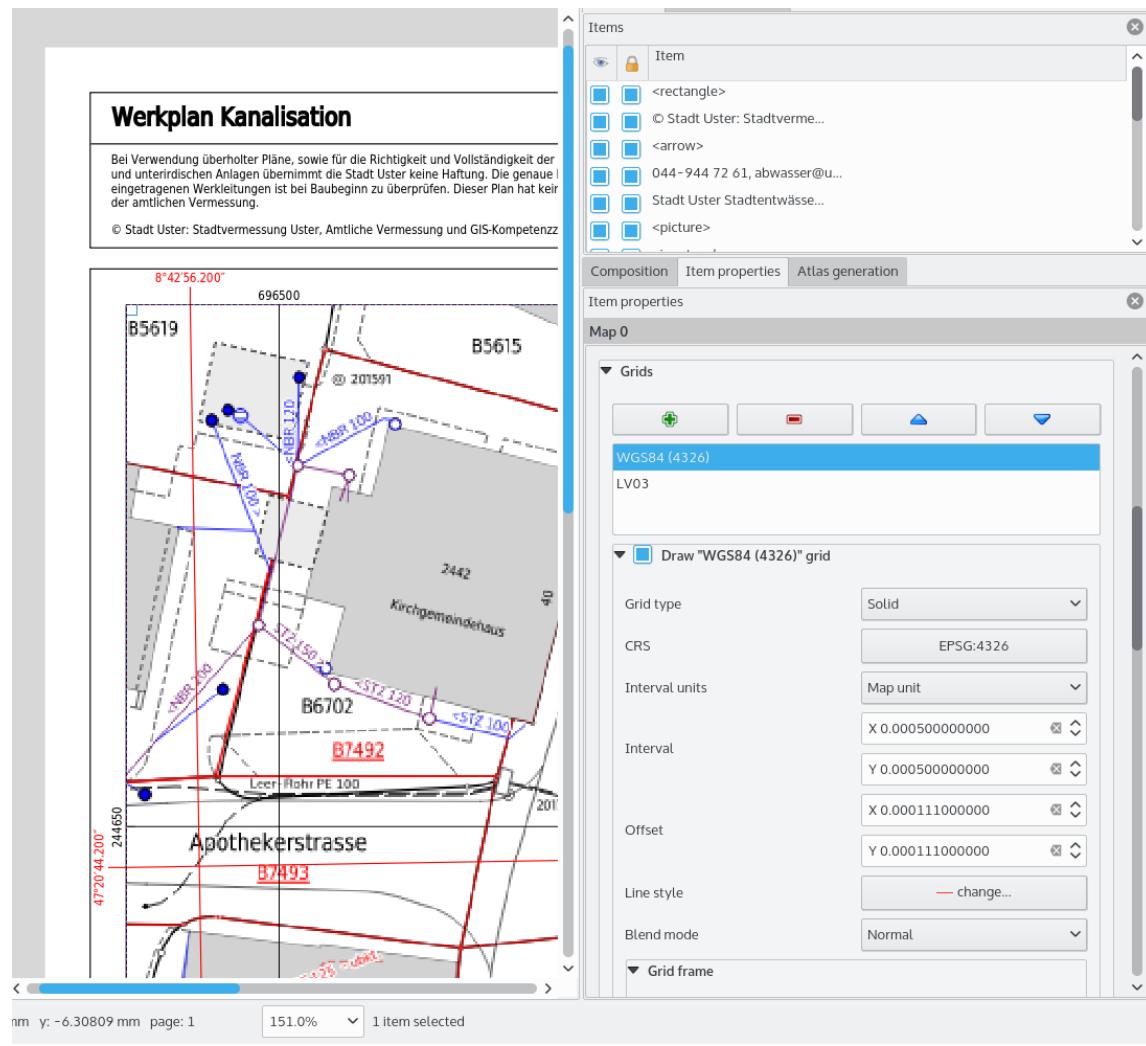
Image/HTML Frame Improvements (2.6)

- Support loading image from URL
- Image Path can be constructed from Expressions
- Resize and placement options
- HTML source from local file, URL or generated from expression
- Better page breaks for multipage HTML content
- Data-defined URL support
- Support for user stylesheets and scripting



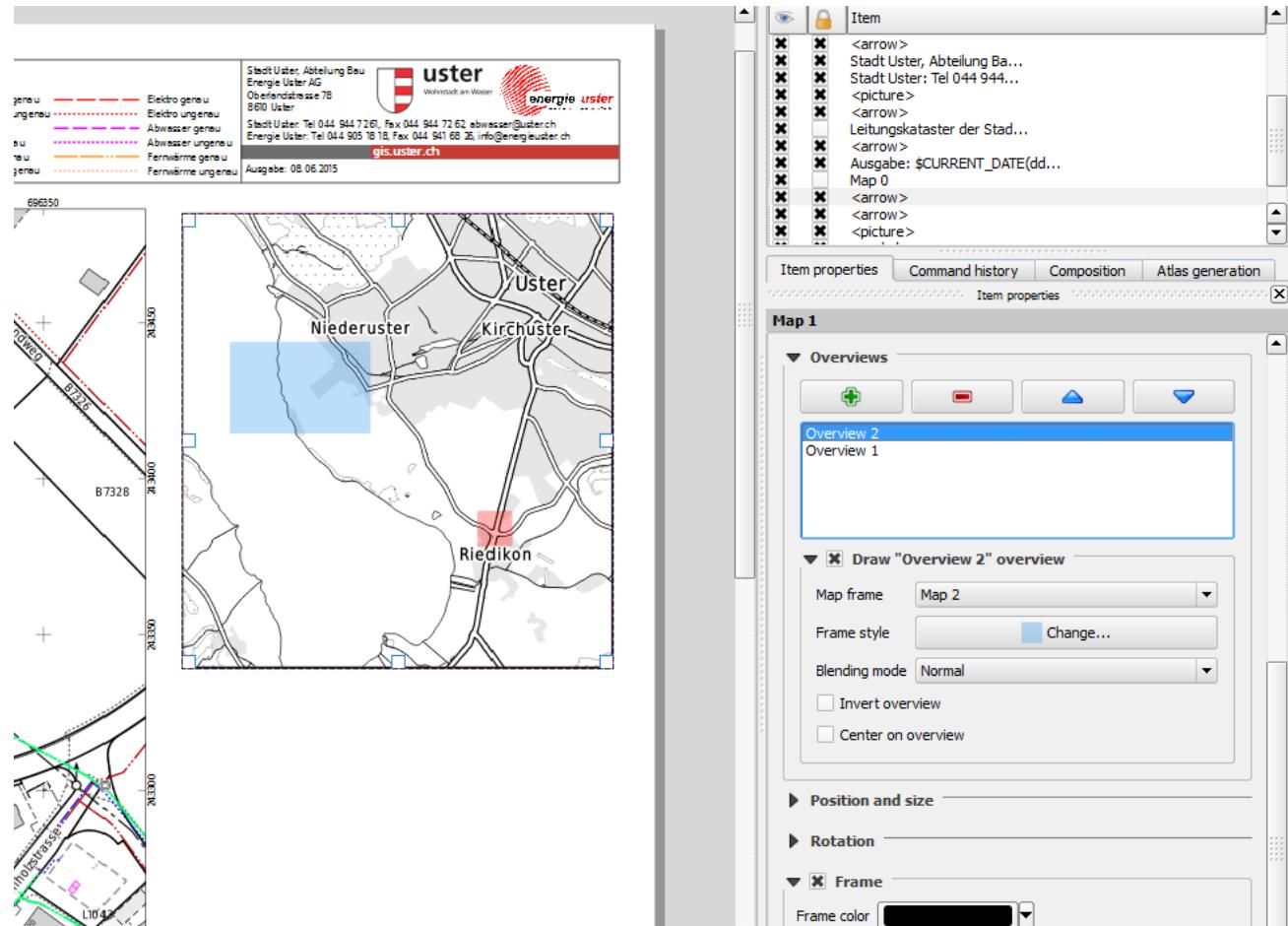
Mapgrid improvements in Composer (2.6)

- Multiple map grids with different CRS
- More Styling Options
- More labelling options
- Better support for lat/lon grids



Multiple Maps in Overview Map (2.6)

- Different styling for each map
- Inverted styling
- Blend modes



Better scaling of scale bars (2.10)

Define
min/max
length of
segment width
and change
map units per
segment

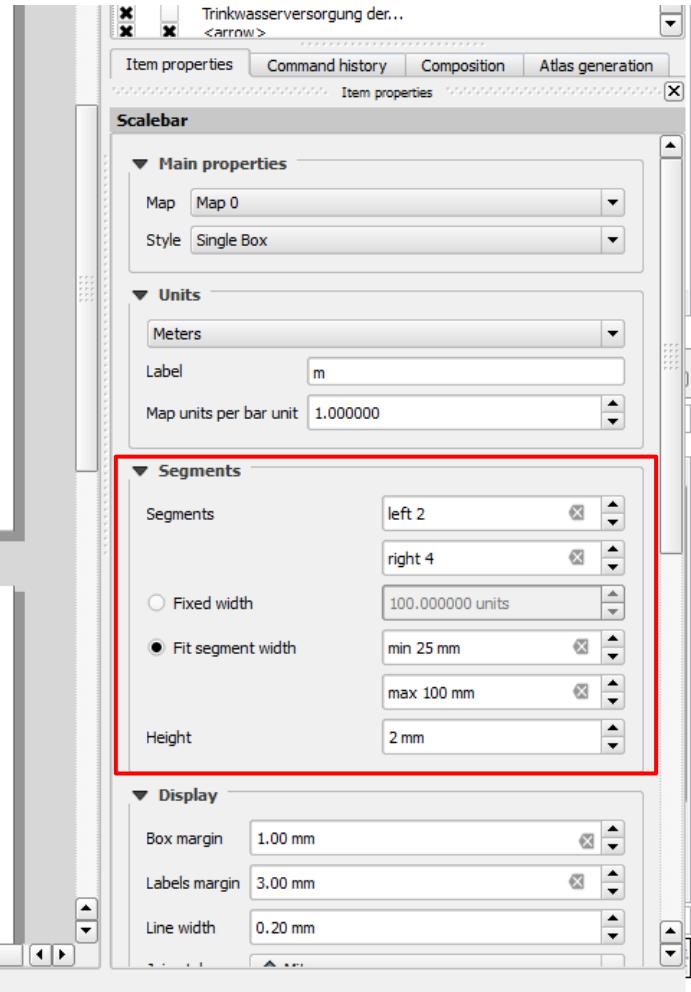
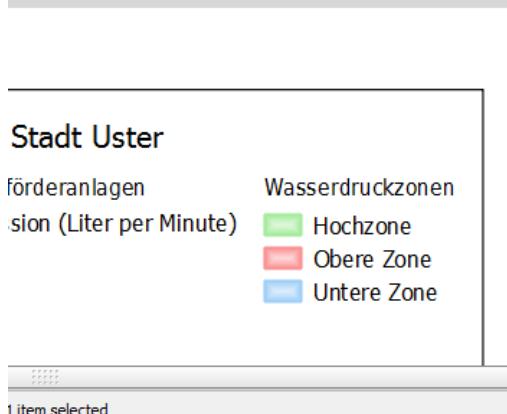
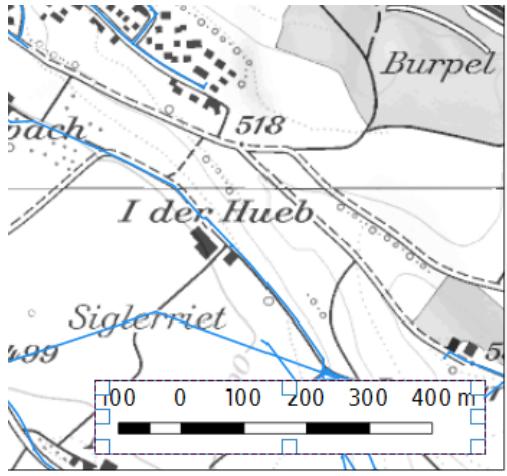


Table Improvements in Composer (2.6)

- Table content can flow in multiple frames/pages
- Lots of new formatting/styling options
- New datasources: atlas feature, intersecting with atlas feature, relations
- New filter/order options

The screenshot shows the QGIS Composer interface with a table and its properties panel.

Table Data:

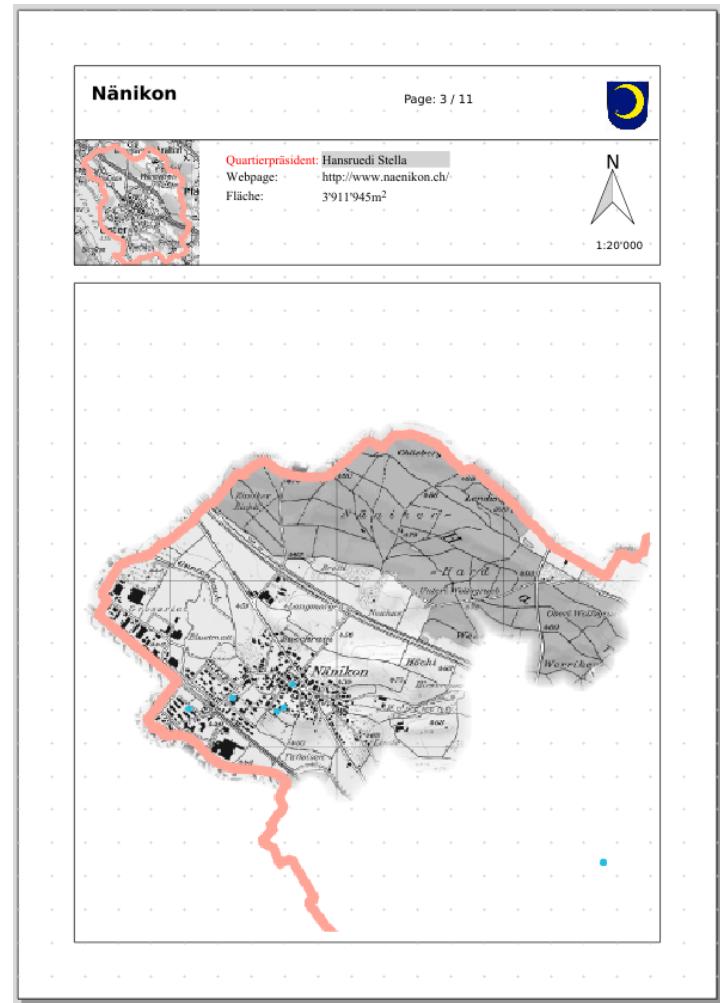
Schachnummer	Strassenname	Schachttyp
198 2351	Talackerstrasse	Schlammssa
198 3478	Zentralstrasse	Schlammssa
198 3482	Talackerstrasse	Schlammssa
21132		Kontrolle, S
21133		Kontrolle, S
21134		Kontrolle, S
21135		Kontrolle, S
21136		Kontrolle, S
22217	Talackerstrasse	Kontrolle, S
291.17.12		Kontrolle, S
291.17.7		Kontrolle, S
630.12.10		Kontrolle, S
630.12.4		Schlammssa
630.14.23		Kontrolle, S
630.4.1		Kontrolle, S
630.6.7		Kontrolle, S
630.6.9		Schlammssa
630.8.1		Kontrolle, S
630.8.7		Kontrolle, S
678.40.3		Hofsammle
678.40.4		Kontrolle, S

Properties Panel:

- Composition:** Shows icons for <attribute table>, <rectangle>, <arrow>, and other items.
- Item properties:** Tab selected.
- Attribute table:**
 - Main properties:** Source: Layer features, Layer: "Normschacht". Buttons: Refresh table data, Attributes...
 - Feature filtering:** Maximum rows: 30, Options: Remove duplicate rows from table, Show only features visible within a map, Show only features intersecting atlas feature, Filter with: schachnummer IS NOT NULL.
 - Appearance:** Options: Show empty rows, Cell margins: 1.00 mm, Display header: On first frame.
- Atlas generation:** Tab shown at the bottom.

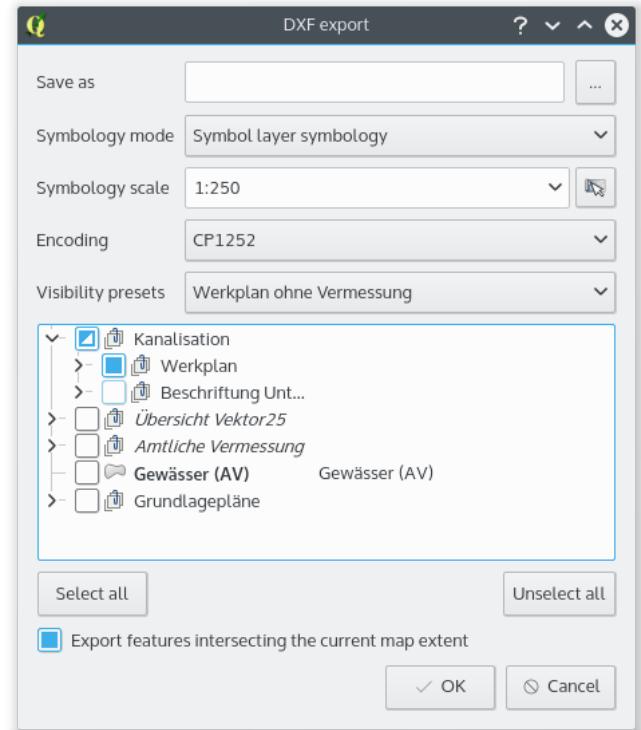
Atlas Serial Print improvements (2.6/2.8)

- New variables for symbology:
\$map, \$atlasfeature,
\$currentfeature,
\$atlasgeometry, \$geometry
- New geometry relation tests
for use in expressions and
with Atlas
- New functions to get records
and attributes from linked
tables: getFeature(),
attribute()

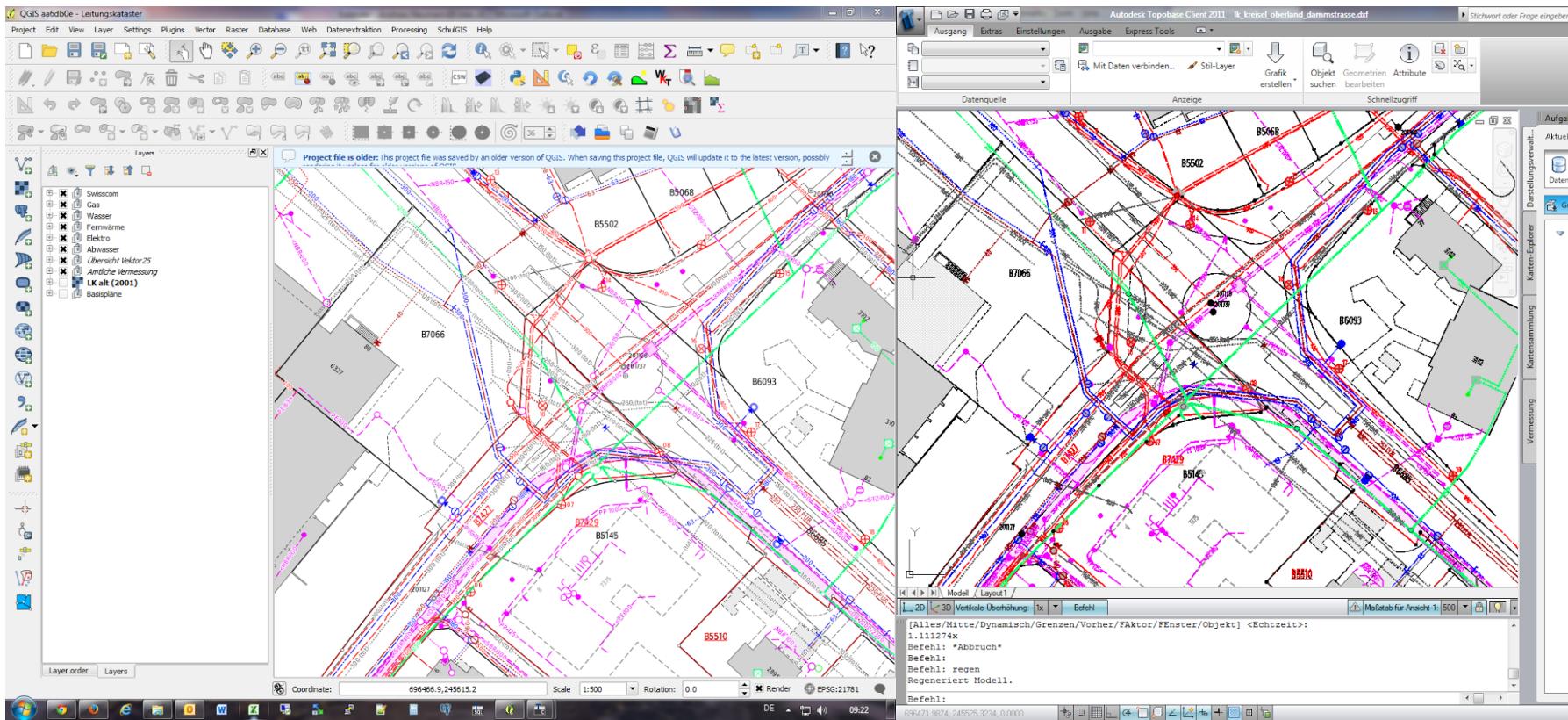


DXF Export Improvements

- Export with our without symbology
- Export everything or visible extent
- Set scale for rendering rules and filters
- Use QGIS layer names or layer attribute to determine layer name
- Support of visibility presets
- Support multiline text
- Support solid fills
- Support transparency
- Support line offsets and units properly
- Automatic conversion of simple and SVG symbols to DXF blocks

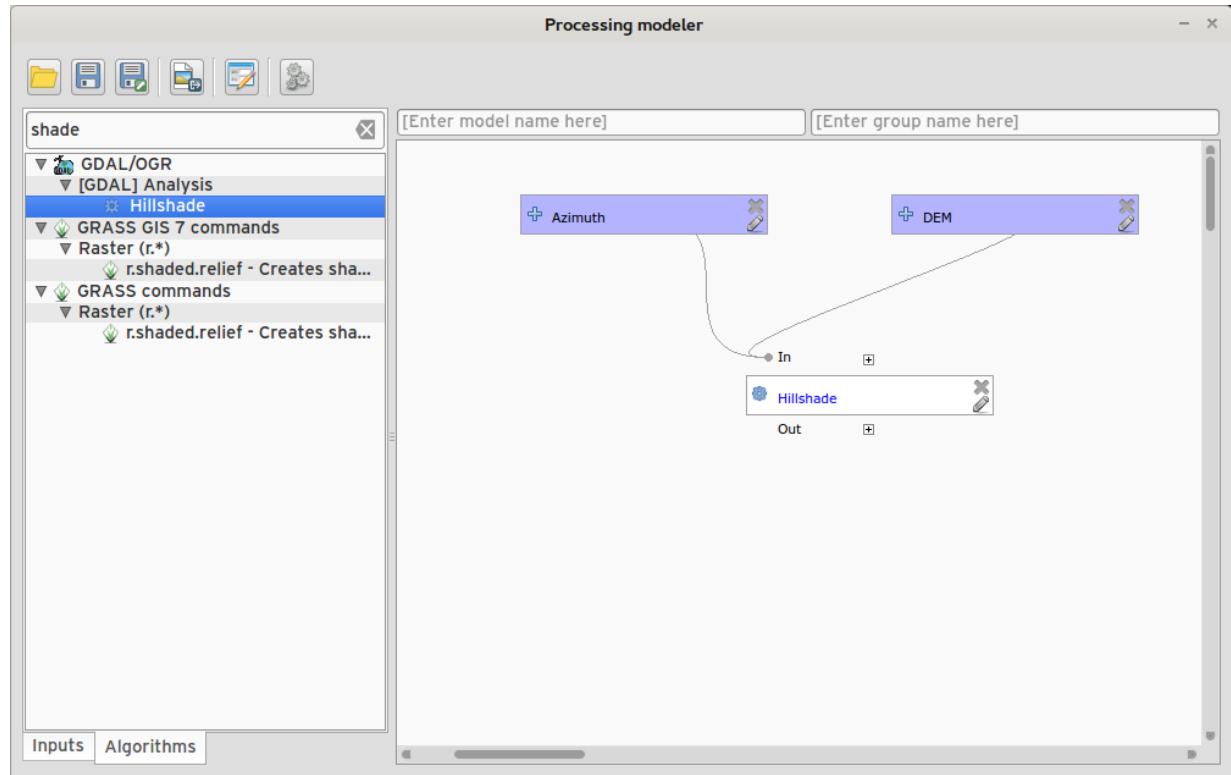


DXF Export Improvements



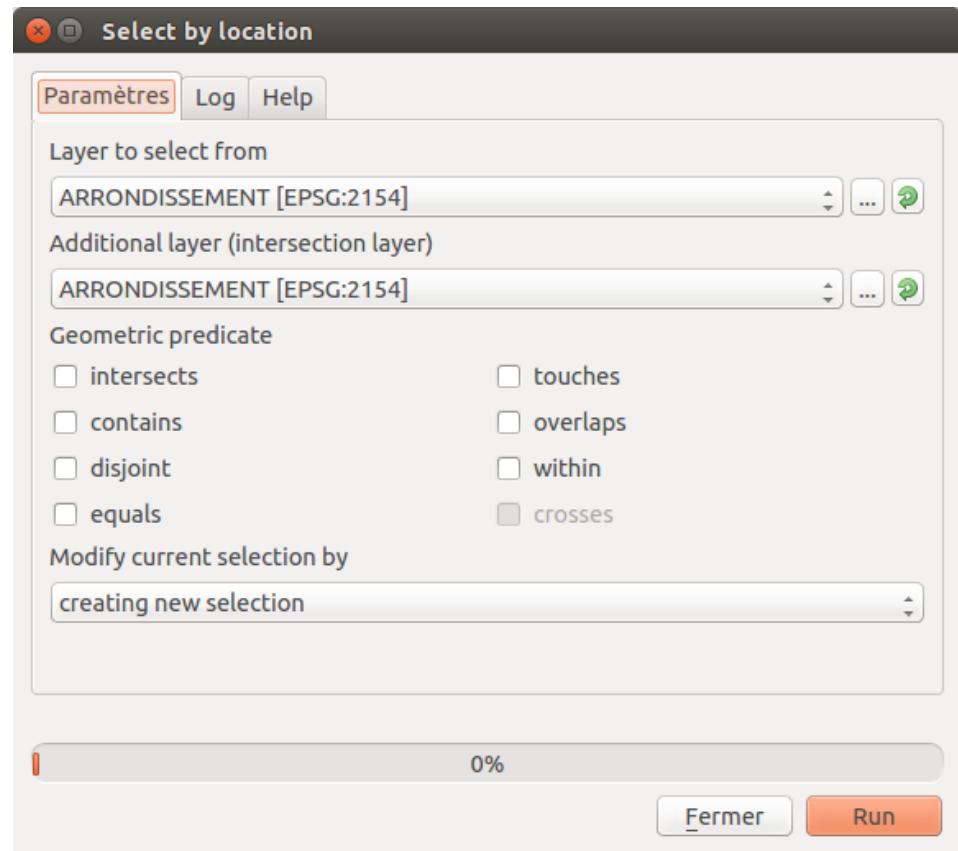
QGIS Processing Improvements (2.6)

- Complete Rewrite of Modeler
- Drag and Drop Support
- Models stored in json format



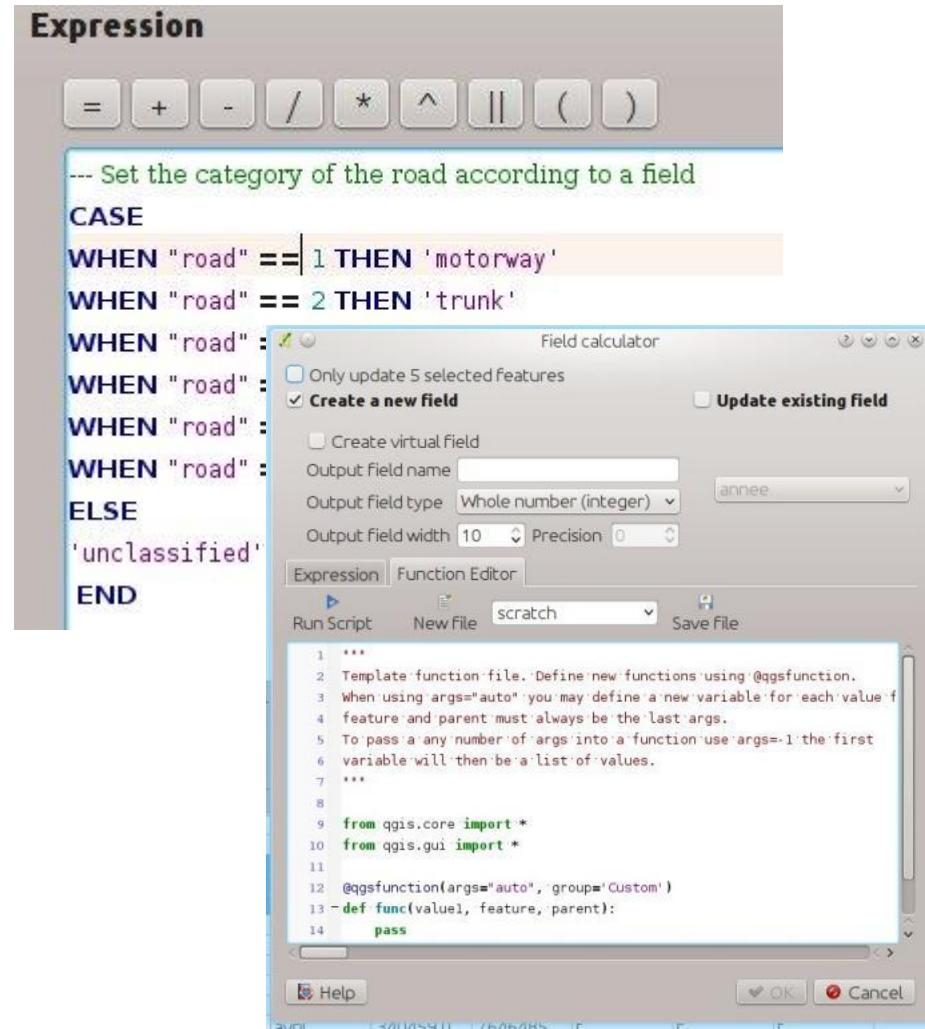
QGIS Processing Improvements (2.8)

- New geometric predicate parameter types for select/extract/join by location
- New Algorithms:
 - refactor fields
 - symmetrical difference
 - Vector split
 - Split lines with lines
 - Vector grid
 - Regular points
 - Hypsometric curves



QGIS Programmability (2.6 and 2.8)

- New API for QGIS widgets
- Custom expressions with Python and new builtin function editor for custom Python expressions
- Add comments (SQL style prefix) to expressions and keep formatting
- Python console improvements
- DB-Manager: run only selected part of SQL query



QGIS Server Improvements

- Enhanced searching with GetFeatureInfo Request (2.6)
- Dynamic GetFeatureInfo tolerance separate for point/line/polygon features
- Precision setting for geometry in GetFeatureInfo response (2.6)
- Python plugins for QGIS Server (2.8)
- Support for layer styles (2.8)
- Describe layer method added to WMS (2.8)

Plans:

- DXF output (2.12)
- Support data-sheets and reports through exposing atlas printing in QGIS Server
- Expose Processing Scripts as WPS

Credits

- To all who paid for new features / bug fixing
 - QGIS-CH
 - SIGE, Uster, Morges, Vevey
 - Kt. Solothurn, Kt. Glarus
 - Agence de l'eau Adour Garonne
 - French Ministry of Ecology, Sustainable Development and Energy
 - World Bank / Inasafe
- To all who developed the new functionality
 - Nyall Dawson
 - Martin Dobias
 - Jürgen Fischer
 - Marco Hugentobler
 - Matthias Kuhn
 - Sandro Mani
 - Hugo Mercier
 - Denis Rouzaud
 - Nathan Woodrow

list is not complete ...