status ELDA: last activities

- implemented new format for result files
- supported Donato with implementation of Rayleigh calibration

status ELDA: next tasks

- test Problem reported by Aldo about iterative bsc
- test measurements with quality flags

status ELDAmwl

- documentation (this pdf) and sql script for necessary changes of the SCC database
  - both in repository
- suggestion for design of new views for mwl product
- implemented new idea of fixed smoothing (see later) into proposed database structure and ELDAmwl

next steps ELDAmwl

- test installation on SCC server with Giuseppe ?
- proposal for improved database structure (SCC db)
- general solution for algorithm-dependent effective vertical resolution
- autosmooth
- lidar ratio

New / modified db tables
mwlproduct_product

ID	_mwl_product_ID	_Product_ID	create_with_hr	create_with_lr
1	598	378	1	0
2	598	379	0	1

→ **requires new view in interface?**

New / modified db tables
_product_types

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product_type	better_name	is_mwl_only_product	is_in_mwl_products	is_basic_product
extinction only	particle extinc...	0	1	1
lidar ratio and extinction	parrticle lidar r...	0	1	0
Raman backscatter	particle backs...	0	1	1
elast. backscatter	particle backs...	0	1	1
High Resolution pre-processed data		0	0	0
Linear polarization calibration		0	0	0
Raman Backscatter and Linear Depo...		0	0	0
Elastic Backscatter and Linear Depol...		0	0	0
multi-wavelength product	multi-wavelen...	0	0	0
Angstroem exponent	Angstroem ex...	1	1	0
color ratio	color ratio	1	1	0
vol depol ratio	volume linear ...	1	1	1
part depol ratio	particle linear ...	1	1	0

→ **requires no changes in other modules**

New / modified db tables
measurements

#	Name	Datentyp	Länge/SET	Vorzeich...	Erlaube NULL	Zerofill	Standard
1	**ID**	**VARCHAR**	**15**	☐	☐	☐	Kein Stand
2	__hoi_stations__ID	CHAR	3	☐	☑	☐	NULL
3	_hoi_system_ID	INT	11	☐	☐	☐	'0'

#	Name	Datentyp	Länge/SET	Vorzeic...	Erlaube ...	Zerofill	Standard
1	**num_id**	**INT**	**11**	☐	☐	☐	**0**
2	ID	VARCHAR	15	☐	☐	☐	
3	__hoi_stations__ID	CHAR	3	☐	☑	☐	NULL
4	_hoi_system_ID	INT	11	☐	☐	☐	0

→ should not require changes in other modules, but needs to be tested !!!
(but we already plan to clean up the db structure)

New / modified db tables
tables with method definitions

ID	method	python_classname
0	weighted linear fit	WeightedLinearFit
1	non-weighted linear fit	NonWeightedLinearFit

→ **requires no changes in other modules**

New / modified db tables

new columns in product_options

#	Name	Datentyp	Länge/SET	Vorzeic...	Erlaube ...	Zerofill	Standard
2	_product_ID	INT	11	☐	☐	☐	-1
3	_lowrange_error_threshold_ID	INT	11	☐	☐	☐	1
4	_highrange_error_threshold_ID	INT	11	☐	☐	☐	1
5	detection_limit	DECIMAL	11,11	☐	☐	☐	0.0000000
6	min_height	DECIMAL	10,4	☐	☐	☐	0.0000
7	max_height	DECIMAL	10,4	☐	☐	☐	0.0000
8	preprocessing_integration_time	INT	11	☐	☐	☐	0
9	preprocessing_vertical_resolution	DECIMAL	10,4	☐	☐	☐	0.0000
10	interpolation_id	INT	11	☐	☑	☐	NULL
11	transition_zone_from	DECIMAL	10,4	☐	☑	☐	NULL
12	transition_zone_to	DECIMAL	10,4	☐	☑	☐	NULL
13	lowres_lowrange_integration_time	INT	11	☐	☑	☐	NULL
14	low_res_highrange_integration_ti...	INT	11	☐	☑	☐	NULL
15	highres_lowrange_integration_ti...	INT	11	☐	☑	☐	NULL
16	highres_highrange_integration_ti...	INT	11	☐	☑	☐	NULL
17	lowres_lowrange_vertical_resoluti...	DECIMAL	10,4	☐	☑	☐	NULL
18	lowres_highrange_vertical_resolu...	DECIMAL	10,4	☐	☑	☐	NULL
19	highres_lowrange_vertical_resolu...	DECIMAL	10,4	☐	☑	☐	NULL
20	highres_highrange_vertical_resol...	DECIMAL	10,4	☐	☑	☐	NULL
21	_smooth_type	INT	11	☐	☐	☐	0

→ **requires no changes in other modules**

New / modified db tables
new table smooth options

ID	smooth_type
0	auto
1	fixed

→ **requires no changes in other modules**

New view for mwl product

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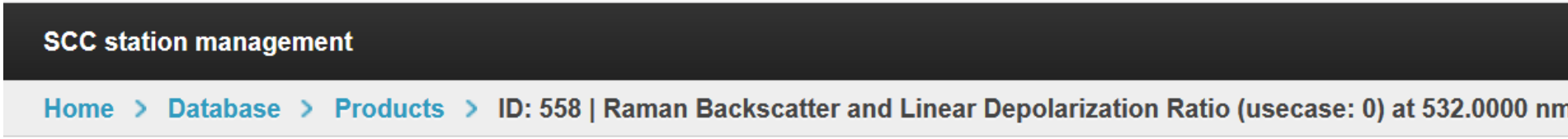
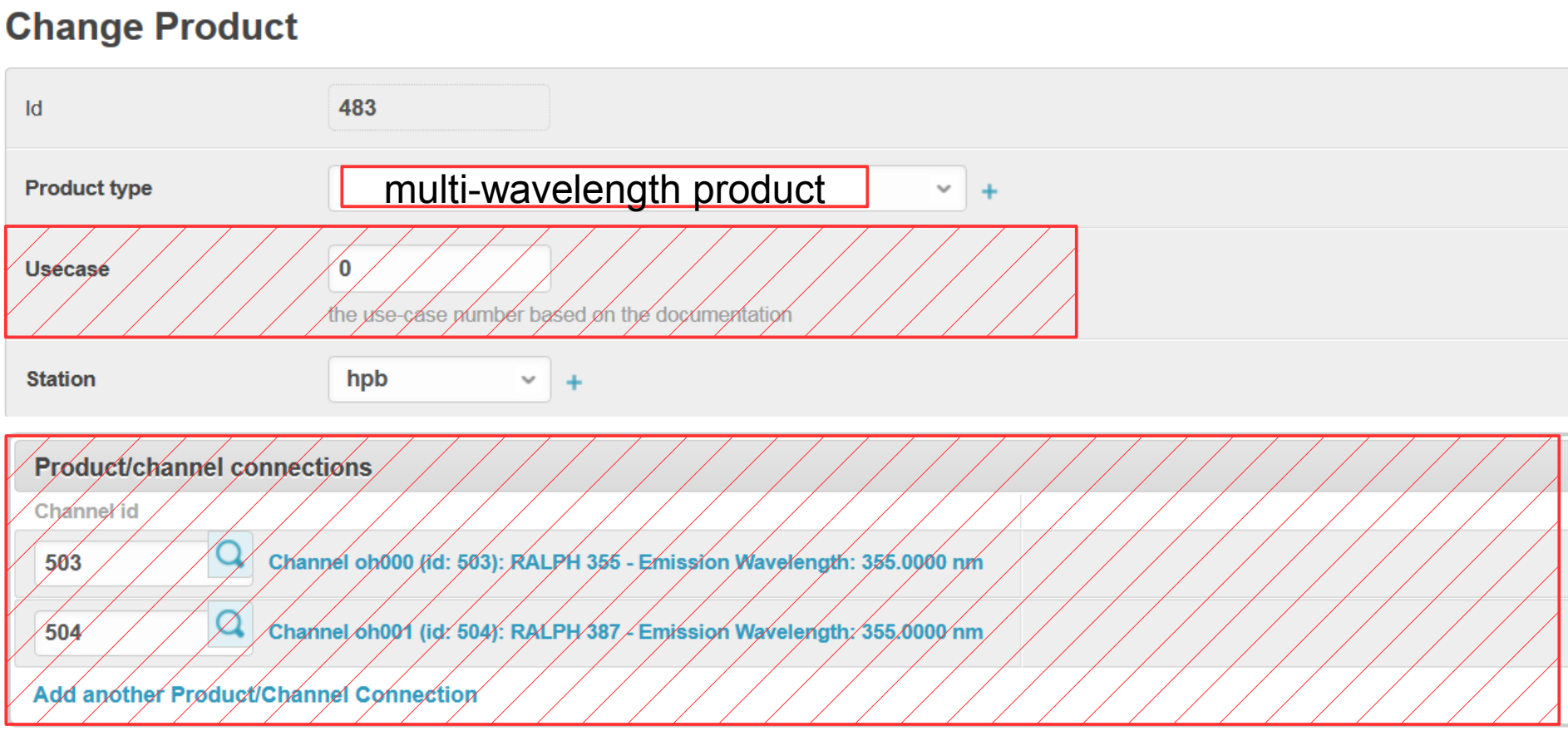


New view for mwl product



New view for mwl product

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System/product connections

system id

187 — 187: RALPH, RALPH nighttime all

191 — 191: RALPH, RALPH nighttime compact

Add another System/Product Connection

Product options

Product options ID: 1296, Product: ID: 483 | lidar ratio and extinction (usecase: 0) at 355.0000 nm

Low range error threshold: 20%: 0.2 — Up to 2 km

High range error threshold: 50%: 0.5 — Above 2 km

these infos are taken from individual products

Detection limit: 0.00000500000 — in m-1sr-1 (backscatter) or in m-1 (extinction)

Min height: 500.0000 — in meters

Max height: 20000.0000 — in meters

Preprocessing integration time: 3600 — in seconds

Preprocessing vertical resolution: 15.0000 — in meters

Interpolation type: ---------

New view for mwl product

smooth options

Product options ID: 1296, Product: ID: 483 | lidar ratio and extinction (usecase: 0) at 355.0000 nm

○ automatic smoothing
◉ fixed smoothing

if fixed smoothing for mwl product,
-> smooth params of individual products are ignored

link to new columns in db table product_options

time and altitude resolutions for fixed smoothing

	low altitude range (below tz)		high-altitude range (above tz)		transition zone (tz)	
	time [s]	altitude [m]	time [s]	altitude [m]	from [m]	to [m]
high-res product	1800	150	1800	300	2000	3000
low-res product	3600	300	7200	900		

New view for mwl product

smooth options

Product options ID: 1296, Product: ID: 483 | lidar ratio and extinction (usecase: 0) at 355.0000 nm

- (•) automatic smoothing
- ( ) fixed smoothing

if auto smooth, table is not active

time and altitude resolutions for fixed smoothing

	low altitude range (below tz)		high-altitude range (above tz)		transition zone (tz)	
	time [s]	altitude [m]	time [s]	altitude [m]	from [m]	to [m]
high-res product	1800	150	1800	300	2000	3000
low-res product	3600	300	7200	900		

EARLINET ACTRiS

New view for mwl product