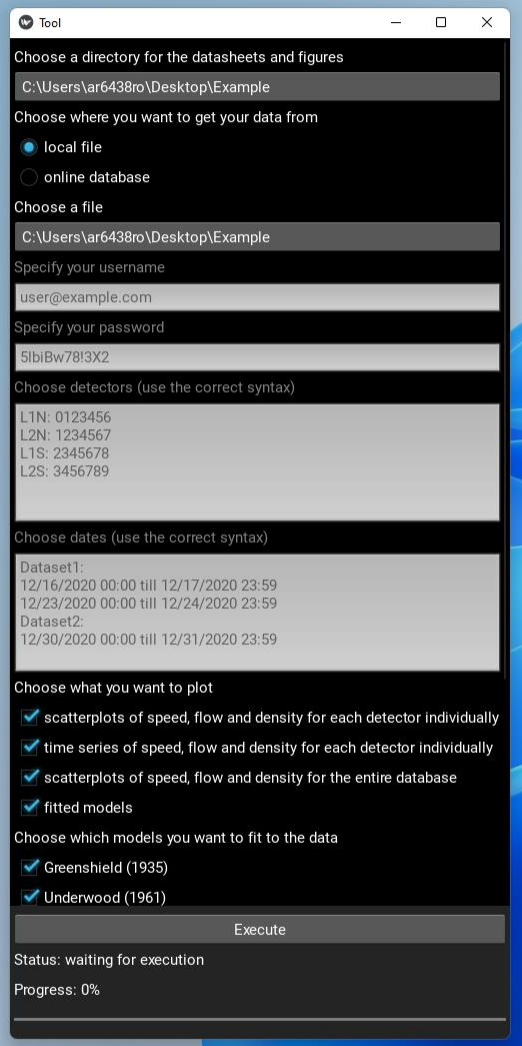


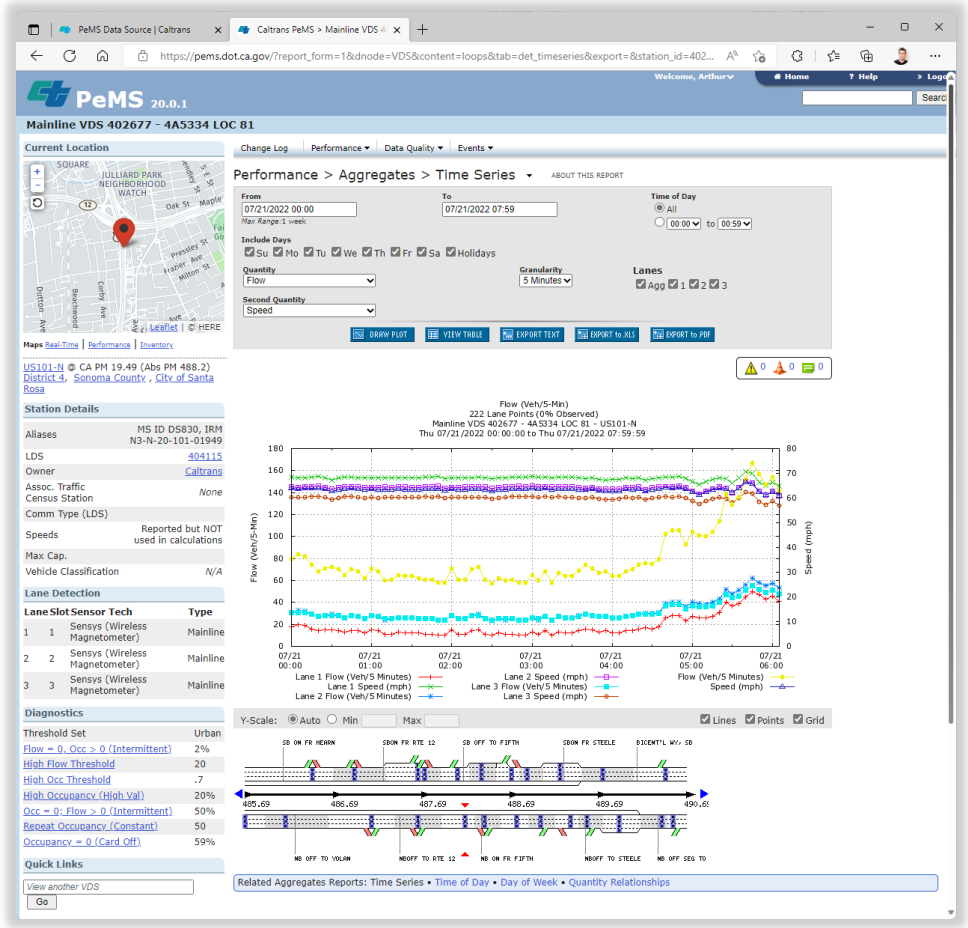
TDA

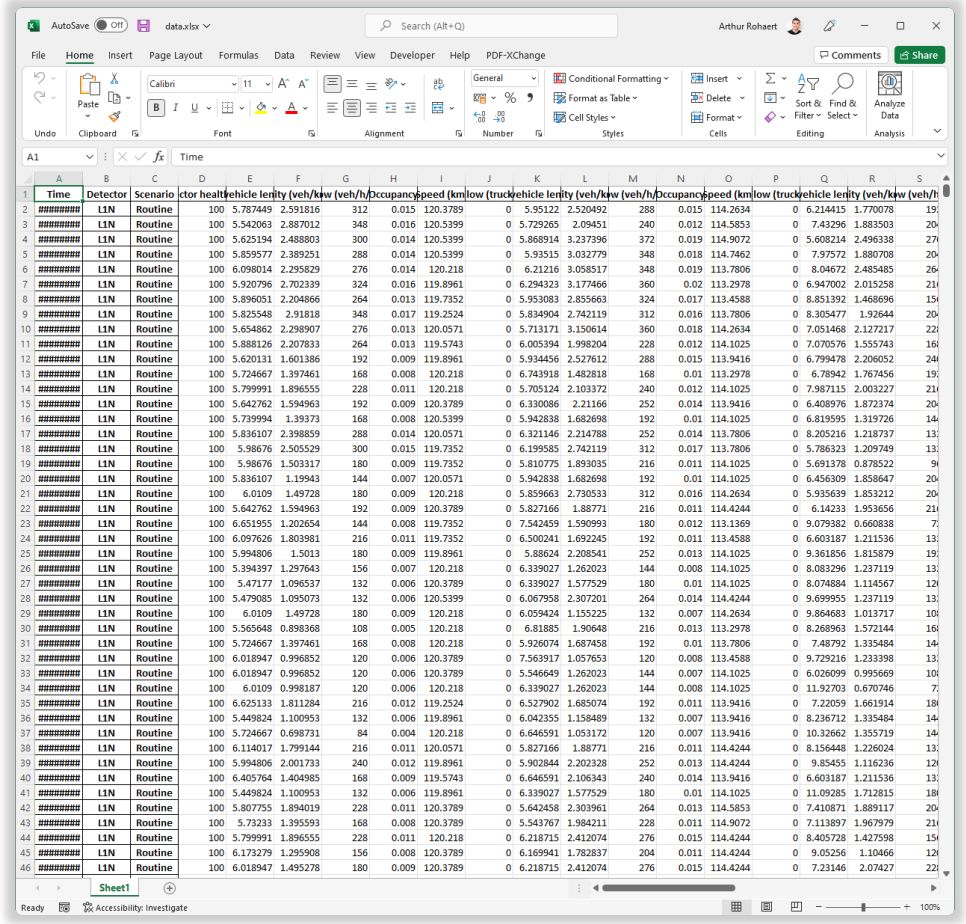
Traffic Dynamics Analyser (v1.0)

A brief user guide by Arthur Rohaert

Thursday the 25th of August, 2022

TDA extracts data from the PeMS database (Caltrans) and delivers datasheets.

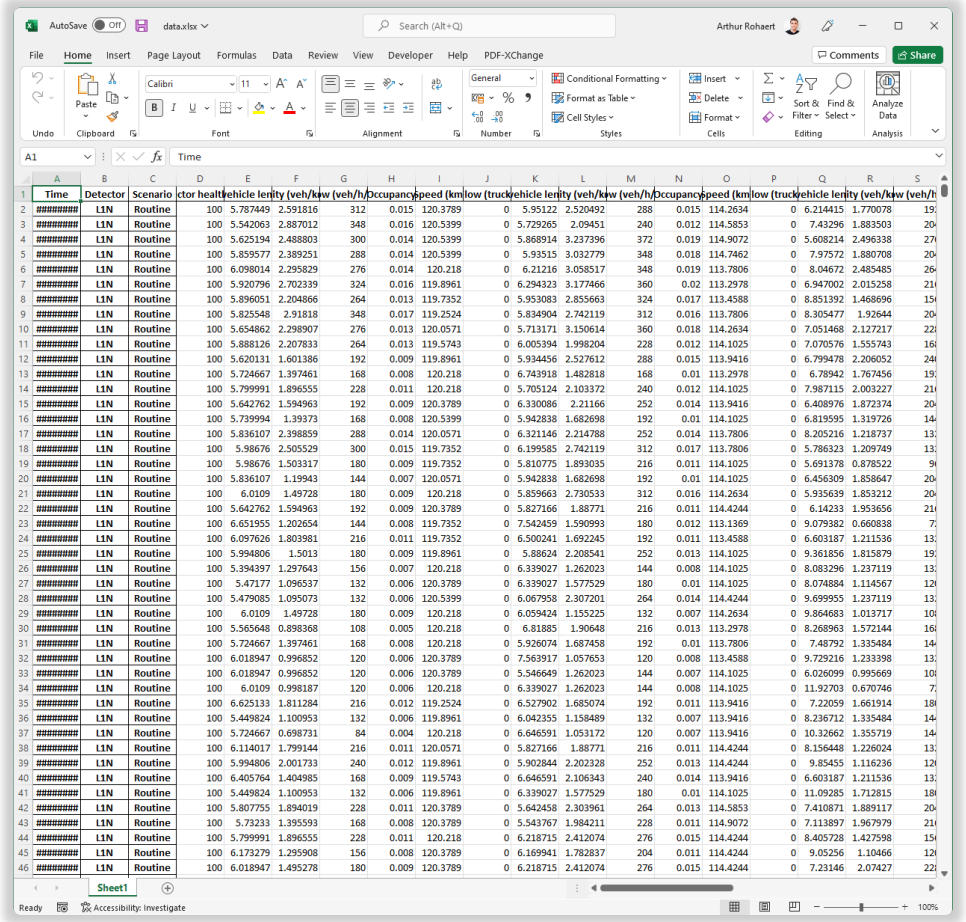




The interface of the PeMS database

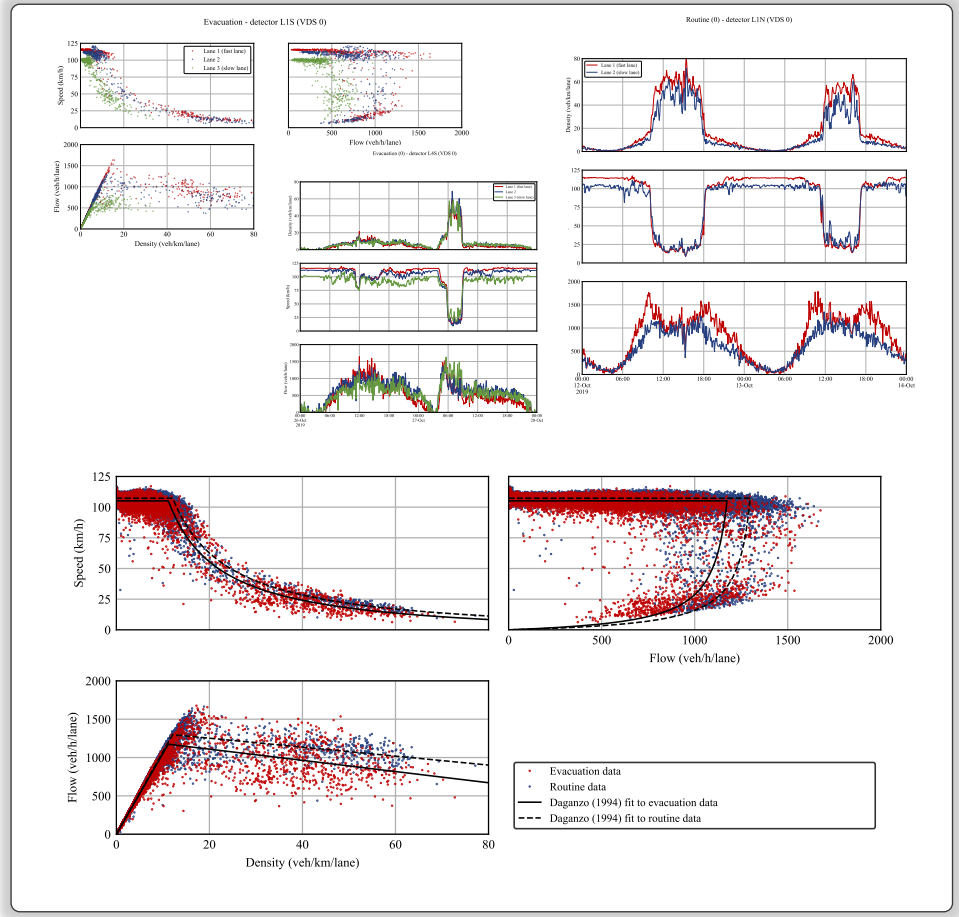
The generated datasheet

TDA also fits the data to established traffic dynamics models and creates graphs of the data and the models.

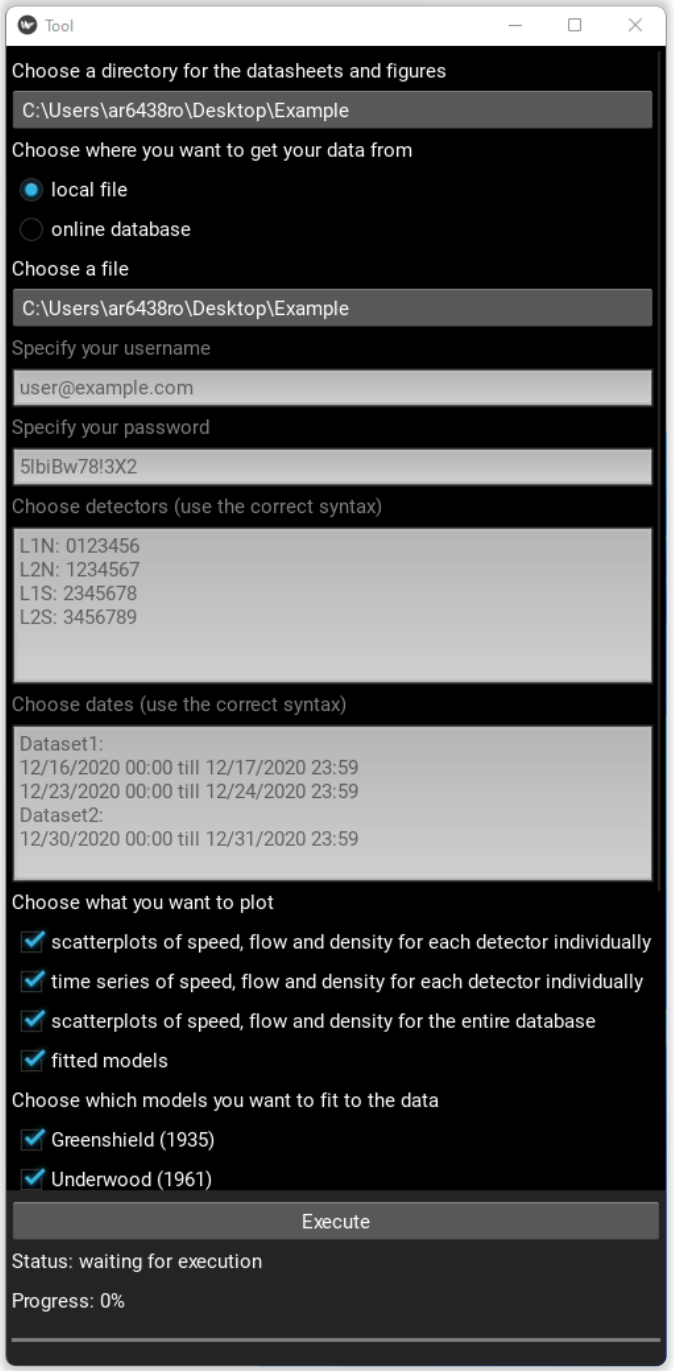


Time	Detector	Scenario	ctor healt	vehicle len	ity (veh/km	w (veh/h/l	Occupancy	peed (km	low (truck	vehicle len	ity (veh/km	w (veh/h/l	Occupancy	peed (km	low (truck	vehicle len	ity (veh/km	w (veh/h/l
########	L1N	Routine	100	5.787449	2.591816	312	0.015	120.3789	0	5.95122	2.520492	288	0.015	114.2634	0	6.214415	1.770078	19
########	L1N	Routine	100	5.542063	2.887012	348	0.016	120.5399	0	5.729265	2.09451	240	0.012	114.5853	0	7.43296	1.883503	20
########	L1N	Routine	100	5.625194	2.488803	300	0.014	120.5399	0	5.868914	3.237396	372	0.019	114.9072	0	5.608214	2.496338	27
########	L1N	Routine	100	5.859577	2.389251	288	0.014	120.5399	0	5.93515	3.032779	348	0.018	114.7462	0	7.97572	1.880708	20
########	L1N	Routine	100	6.098014	2.295829	276	0.014	120.218	0	6.21216	3.058517	348	0.019	113.7806	0	8.04672	2.485485	26
########	L1N	Routine	100	5.920796	2.702339	324	0.016	119.8961	0	6.294323	3.177466	360	0.02	113.2978	0	6.947002	2.015258	21
########	L1N	Routine	100	5.896051	2.204866	264	0.013	119.7352	0	5.953083	2.855663	324	0.017	113.4588	0	8.851392	1.468696	15
########	L1N	Routine	100	5.825548	2.91818	348	0.017	119.2524	0	5.834904	2.742119	312	0.016	113.7806	0	8.305477	1.92644	20
########	L1N	Routine	100	5.654862	2.298907	276	0.013	120.0571	0	5.713171	3.150614	360	0.018	114.2634	0	7.051468	2.127217	22
########	L1N	Routine	100	5.888126	2.207833	264	0.013	119.5743	0	6.005394	1.998204	228	0.012	114.1025	0	7.070576	1.555743	16
########	L1N	Routine	100	5.620131	1.601386	192	0.009	119.8961	0	5.934456	2.527612	288	0.015	113.9416	0	6.799478	2.206052	24
########	L1N	Routine	100	5.724667	1.397461	168	0.008	120.218	0	6.743918	1.482818	168	0.01	113.2978	0	6.78942	1.767456	19
########	L1N	Routine	100	5.799991	1.896555	228	0.011	120.218	0	5.705124	2.103372	240	0.012	114.1025	0	7.987115	2.003227	21
########	L1N	Routine	100	5.642762	1.594963	192	0.009	120.3789	0	6.330086	2.21166	252	0.014	113.9416	0	6.408976	1.872374	20
########	L1N	Routine	100	5.739994	1.39373	168	0.008	120.5399	0	5.942838	1.682698	192	0.01	114.1025	0	6.819595	1.319726	14
########	L1N	Routine	100	5.836107	2.398859	288	0.014	120.0571	0	6.321146	2.214788	252	0.014	113.7806	0	8.205216	1.218737	13
########	L1N	Routine	100	5.98676	2.505529	300	0.015	119.7352	0	6.199585	2.742119	312	0.017	113.7806	0	5.786323	1.209749	13
########	L1N	Routine	100	5.98676	1.503317	180	0.009	119.7352	0	5.810775	1.893035	216	0.011	114.1025	0	5.691378	0.878522	9
########	L1N	Routine	100	5.836107	1.19943	144	0.007	120.0571	0	5.942838	1.682698	192	0.01	114.1025	0	6.456309	1.858647	20
########	L1N	Routine	100	6.0109	1.49728	180	0.009	120.218	0	5.859663	2.730533	312	0.016	114.2634	0	5.935639	1.853212	20
########	L1N	Routine	100	5.642762	1.594963	192	0.009	120.3789	0	5.827166	1.88771	216	0.011	114.4244	0	6.14233	1.953656	21
########	L1N	Routine	100	6.651955	1.202654	144	0.008	119.7352	0	7.542459	1.590993	180	0.012	113.1369	0	9.079382	0.660838	7
########	L1N	Routine	100	6.097626	1.803981	216	0.011	119.7352	0	6.500241	1.692245	192	0.011	113.4588	0	6.603187	1.211536	13
########	L1N	Routine	100	5.994806	1.5013	180	0.009	119.8961	0	5.88624	2.208541	252	0.013	114.1025	0	9.361856	1.815879	19
########	L1N	Routine	100	5.394397	1.297643	156	0.007	120.218	0	6.339027	1.262023	144	0.008	114.1025	0	8.083296	1.237119	13
########	L1N	Routine	100	5.47177	1.096537	132	0.006	120.3789	0	6.339027	1.577529	180	0.01	114.1025	0	8.074884	1.114567	12
########	L1N	Routine	100	5.479085	1.095073	132	0.006	120.5399	0	6.067958	2.307201	264	0.014	114.4244	0	9.699955	1.237119	13
########	L1N	Routine	100	6.0109	1.49728	180	0.009	120.218	0	6.059424	1.155225	132	0.007	114.2634	0	9.864683	1.013717	10
########	L1N	Routine	100	5.565648	0.898368	108	0.005	120.218	0	6.81885	1.90648	216	0.013	113.2978	0	8.268963	1.572144	16
########	L1N	Routine	100	5.724667	1.397461	168	0.008	120.218	0	5.926074	1.687458	192	0.01	113.7806	0	7.48792	1.335484	14
########	L1N	Routine	100	6.018947	0.996852	120	0.006	120.3789	0	7.563917	1.057653	120	0.008	113.4588	0	9.729216	1.233398	13
########	L1N	Routine	100	6.018947	0.996852	120	0.006	120.3789	0	5.546649	1.262023	144	0.007	114.1025	0	6.026099	0.995669	10
########	L1N	Routine	100	6.0109	0.998187	120	0.006	120.218	0	6.339027	1.262023	144	0.008	114.1025	0	11.92703	0.670746	7
########	L1N	Routine	100	6.625133	1.811284	216	0.012	119.2524	0	6.527902	1.685074	192	0.011	113.9416	0	7.22059	1.661914	18
########	L1N	Routine	100	5.449824	1.100953	132	0.006	119.8961	0	6.042355	1.158489	132	0.007	113.9416	0	8.236712	1.335484	14
########	L1N	Routine	100	5.724667	0.698731	84	0.004	120.218	0	6.646591	1.053172	120	0.007	113.9416	0	10.32662	1.355719	14
########	L1N	Routine	100	6.114017	1.799144	216	0.011	120.0571	0	5.827166	1.88771	216	0.011	114.4244	0	8.156448	1.226024	13
########	L1N	Routine	100	5.994806	2.001733	240	0.012	119.8961	0	5.902844	2.202328	252	0.013	114.4244	0	9.85455	1.116236	12
########	L1N	Routine	100	6.405764	1.404985	168	0.009	119.5743	0	6.646591	2.106343	240	0.014	113.9416	0	6.603187	1.211536	13
########	L1N	Routine	100	5.449824	1.100953	132	0.006	119.8961	0	6.339027	1.577529	180	0.01	114.1025	0	11.09285	1.712815	18
########	L1N	Routine	100	5.807755	1.894019	228	0.011	120.3789	0	5.642458	2.303961	264	0.013	114.5853	0	7.410871	1.889117	20
########	L1N	Routine	100	5.73233	1.395593	168	0.008	120.3789	0	5.543767	1.984211	228	0.011	114.9072	0	7.113897	1.967979	21
########	L1N	Routine	100	5.799991	1.896555	228	0.011	120.218	0	6.218715	2.412074	276	0.015	114.4244	0	8.405728	1.427598	15
########	L1N	Routine	100	6.173279	1.295908	156	0.008	120.3789	0	6.169941	1.782837	204	0.011	114.4244	0	9.05256	1.10466	12
########	L1N	Routine	100	6.018947	1.495278	180	0.009	120.3789	0	6.218715	2.412074	276	0.015	114.4244	0	7.23146	2.07427	22

The generated datasheet



The graphs of density, speed and flow.



Select a folder in which you want to save all the generated data

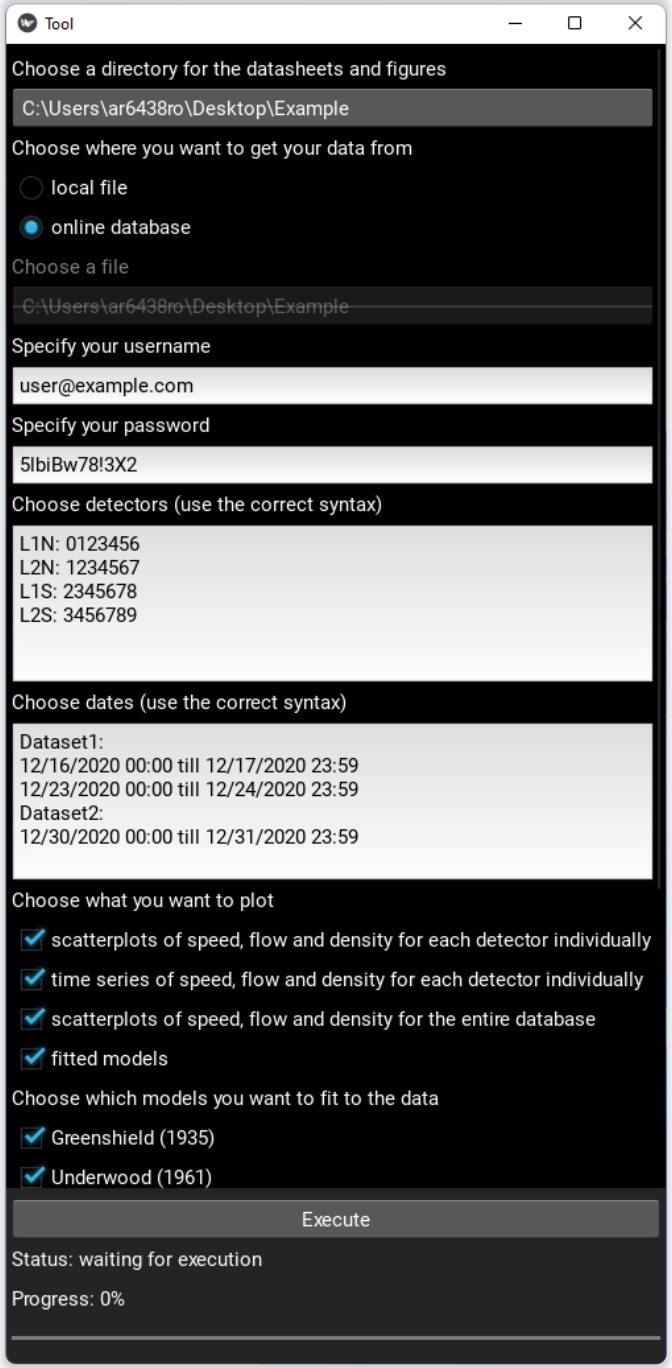
- ⚠ The tool will overwrite existing files in this folder.
- ⚠ An error will occur when one of those files is already opened somewhere else on the computer.

Choose where you want to obtain the data from. Either from a datasheet that is stored on the computer or directly from the PeMS database (online). Once you have downloaded the data for the first time, a datasheet will be saved in the chosen directory. The next time you want to generate figures for the same data, you can select this sheet.

Select the local file.

- ⚠ Only datasheets with the correct structure and same format can be uploaded.

The graphical user interface of the TDA tool



Provide your username and your password of your PeMS account

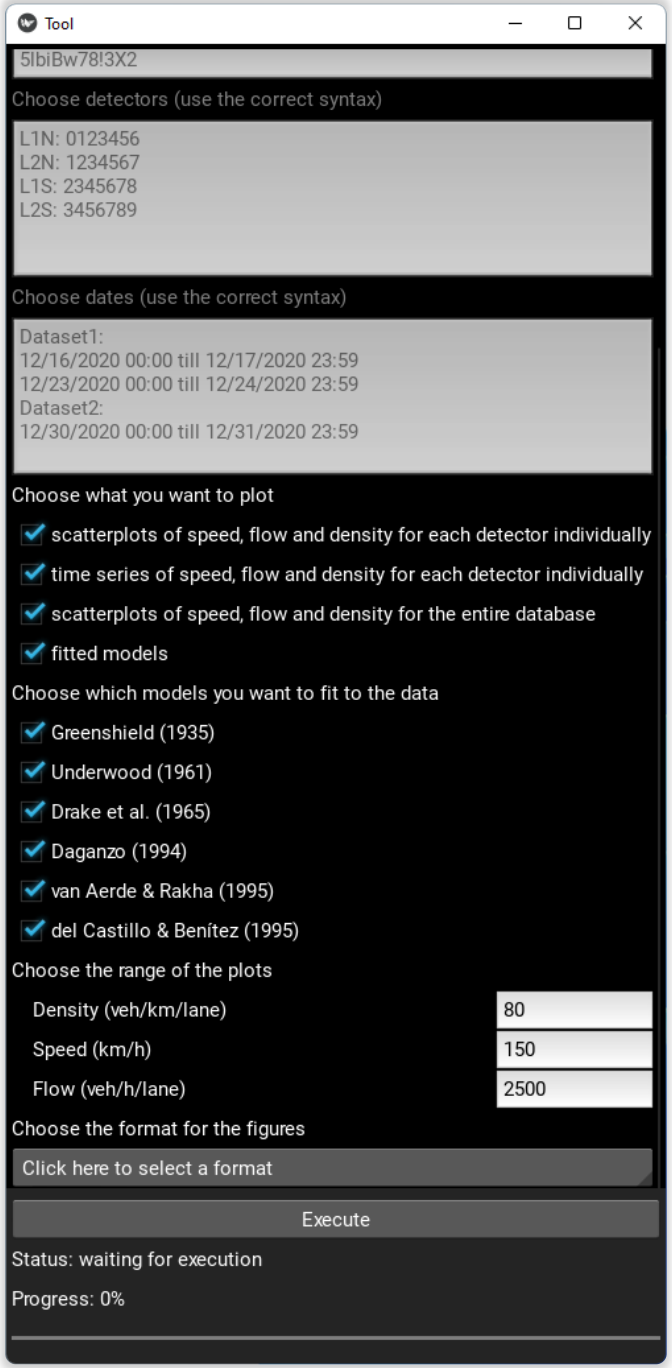
Specify for which detectors you want to obtain data. Use the correct syntax.

- ⚠ Choose a unique name for all detectors (a combination of letters and numbers).
- ⚠ Separate this name from the id (VDS) with a colon.
- ⚠ Write the details for the next detector on a new line.

Specify for which dates you want to obtain data. Use the correct syntax.

- ⚠ Choose a unique name for a label (routine, evacuation, hurricane, mist, …), followed by a colon.
- ⚠ Write the considered dates for this label on the following lines. Use the same format as provided by default: “mm/dd/yyyy hh:mm till mm/dd/yyyy hh:mm”
- ⚠ Separate different periods by line.

The graphical user interface of the TDA tool



Select the plots you wish to generate

Select the models you want to fit to the obtained data.

Select the maximum values of the density, speed and flow that will be displayed in the figures.

- ⚠ Provide only numbers, use a decimal point if necessary.
- ⚠ Avoid letters, spaces, commas and other signs.

Select one of the suggested formats for the figures

Execute! An error will occur if:

- ⚠ the username and or password are wrong
- ⚠ the detectors or dates are not listed correctly
- ⚠ the input file has an incorrect format or structure.

The graphical user interface of the TDA tool