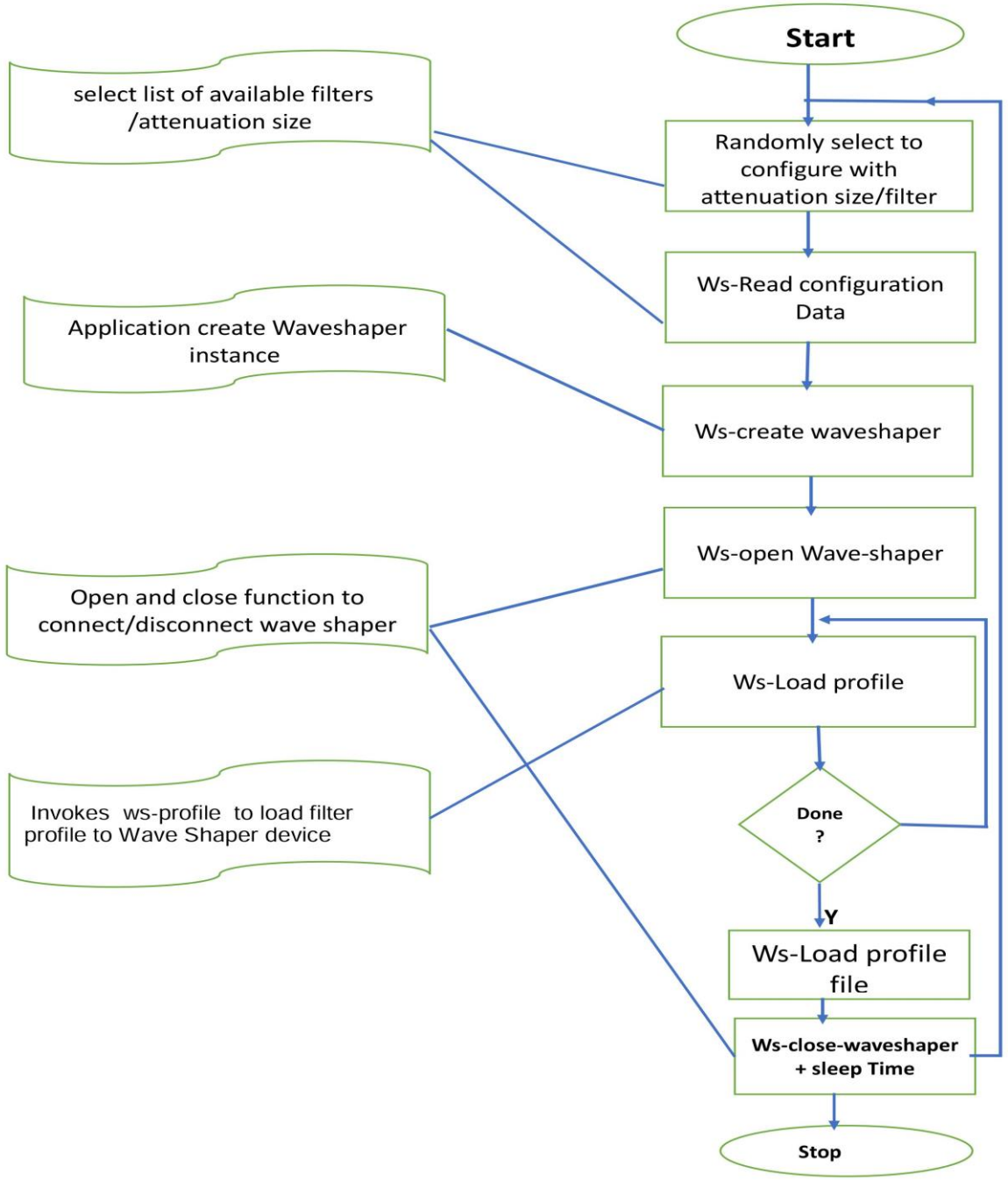
Implementation of Automated Waveshaper

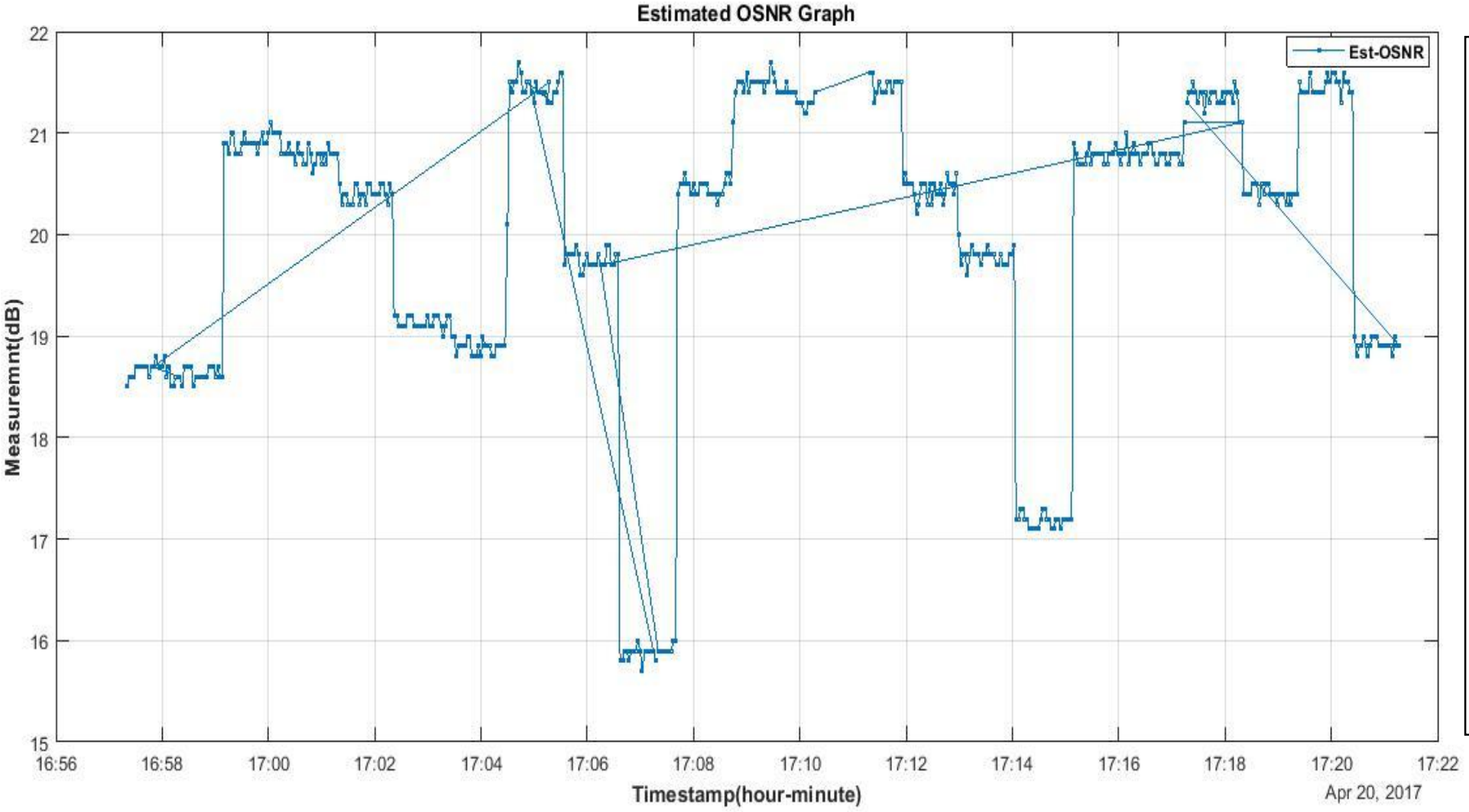
Intro

- The application is based on python-API
- Able to load filter with different frequency filters and attenuation values
- Configure frequency filters with fixed size granularity setting low and high frequency
- Randomly select from list of different available frequency filter and attenuation size on each given time
- Apply the selected attenuation size/frequency filter to wave-shaper device on each give time
- Sample given frequency filters [26, 32, 46 Ghz wide frequency] and attenuation values [1,3,6,9,12,18 ,21 dB]
- 26Ghz frequency supporting maximum attention value 9dB attenuation
- [32,46Ghz] maximum attenuation value limitation 21dB
- Text file to refer the filter applied on the given time

Program Structure Flow chart



Measurement result of OSNR



* Sample description on the graph , how the program applies

- Lowest OSNR: 0n T.stamp 17:07 32ghz wide frequency with attenuation 21
- Highest OSNR> on T.stamp 17:09 50ghz wide frequency

More behavior of the graph refer Table on last slide

Measurement Result of FEC-BER

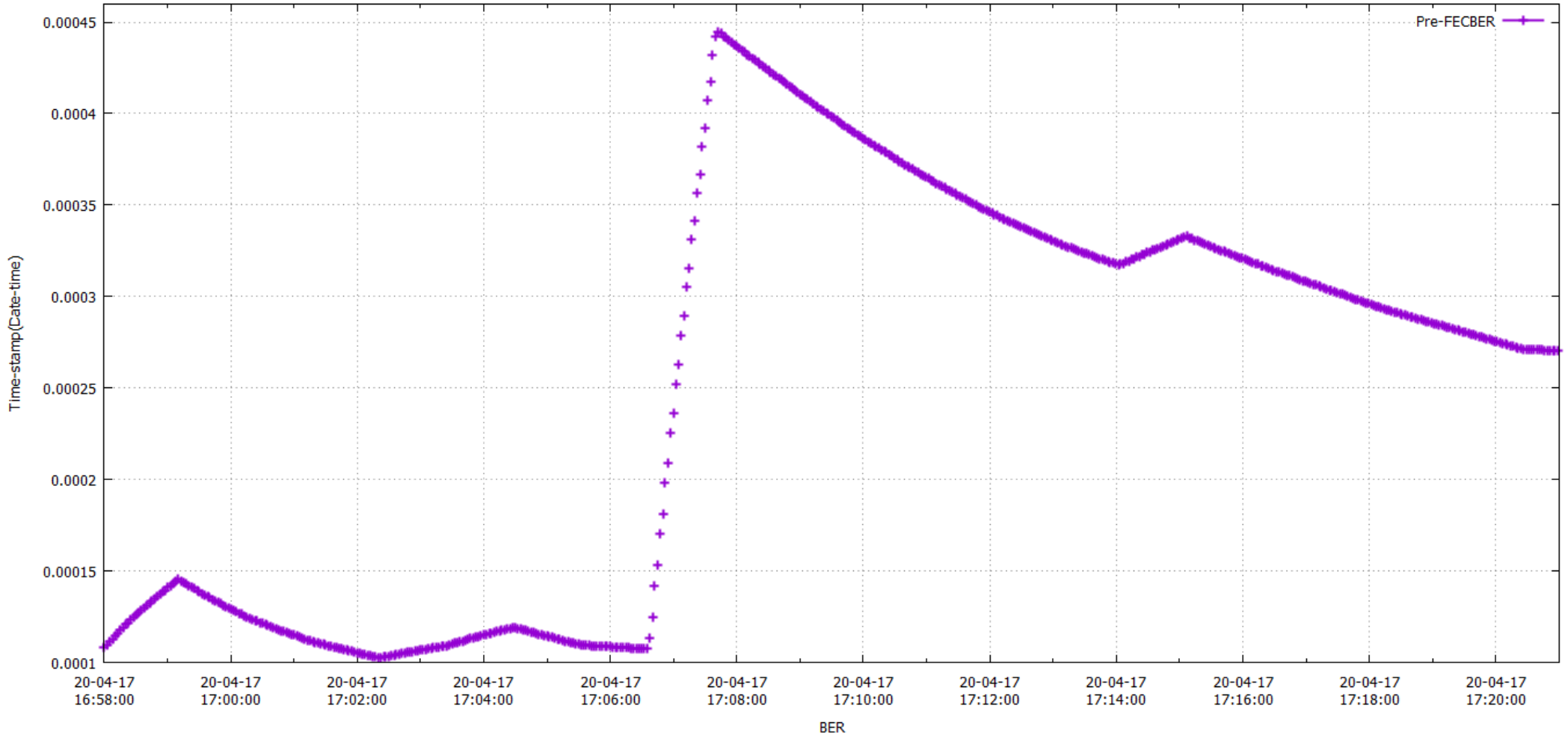


Table of Reference how the program changes values of waveshaper at each minute

Column1	Column2	Column3	Column4	Column5	Column6	Column7
gap=	0.013	16:57:09	type=	0	attenuation=	9
gap=	0.013	16:58:12	type=	0	attenuation=	9
gap=	0.023	16:59:16	type=	0	attenuation=	12
gap=	0.016	17:01:23	type=	0	attenuation=	1
gap=	0.013	17:02:27	type=	0	attenuation=	1
gap=	0.013	17:03:31	type=	0	attenuation=	6
gap=	0.016	17:05:38	type=	0	attenuation=	12
gap=	0.016	17:06:42	type=	0	attenuation=	21
gap=	0.023	17:09:53	type=	0	attenuation=	6
gap=	0.023	17:10:57	type=	0	attenuation=	1
gap=	0.023	17:14:08	type=	0	attenuation=	21
gap=	0.016	17:18:23	type=	0	attenuation=	1
gap=	0.013	17:20:30	type=	0	attenuation=	6
gap=	0.017	17:00:20	type=	1		
gap=	0.022	17:04:35	type=	1		
gap=	0.016	17:07:46	type=	1		
gap=	0.025	17:08:50	type=	1		
gap=	0.016	17:12:01	type=	1		
gap=	0.014	17:13:04	type=	1		
gap=	0.017	17:15:12	type=	1		
gap=	0.017	17:16:16	type=	1		
gap=	0.021	17:17:19	type=	1		
gap=	0.023	17:19:27	type=	1		
gap=	0.015	17:21:34	type=	1		