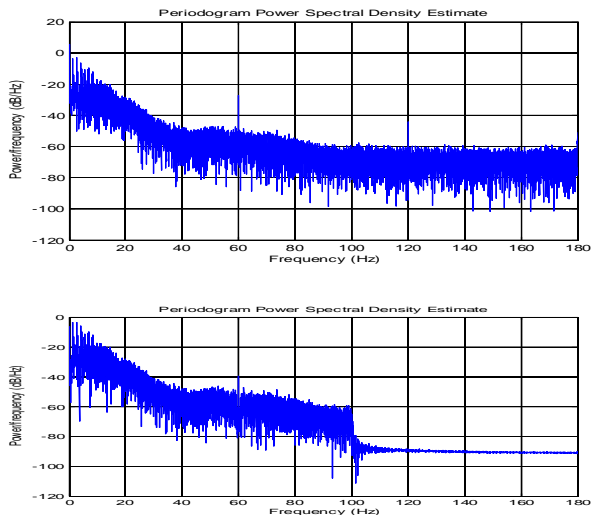
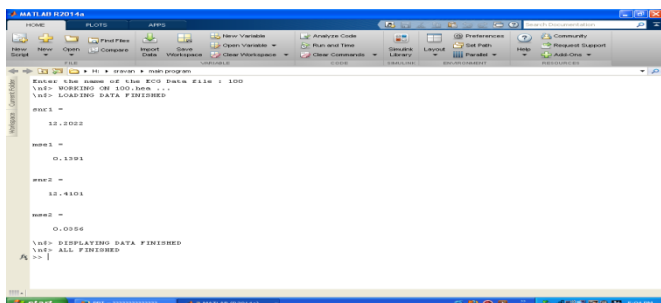


8.3 Power spectral density of noisy and filtered ECG



8.4 Result in command window



8.5 SNR (Signal to noise ratio) comparison of window based FIR filters

Real ECG data	SNR	Signal to noise ratio of FIR (windowing) filtered ECG signal				
		Rectangular	Hann	Hamming	Blackman	Kaiser
100m	12.2	12.331	14.14	13.977	14.144	12.42
104m	8.09	7.8216	7.520	7.581	7.7855	7.793
105m	8.30	9.2670	8.396	8.4674	8.5737	9.333
106m	10.1	10.963	12.44	12.478	12.504	13.01
108m	4.71	3.4711	5.155	4.9928	5.4241	5.516
109m	6.33	7.2382	6.258	6.3297	6.3841	7.184

8.6 MSE (Mean square error) comparison of window based FIR filters

Real ECG data	MSE	Mean square error of the FIR (windowing) filtered ECG signal				
		Rectangular	Hann	Hamming	Blackman	Kaiser
100m	0.1391	0.0349	0.0667	0.0631	0.0751	0.036
104m	0.1303	0.0637	0.0811	0.0792	0.0852	0.066
105m	0.1423	0.0968	0.1067	0.1054	0.1095	0.097
106m	0.1288	0.0920	0.1008	0.0997	0.1031	0.092
108m	0.0892	0.0262	0.0434	0.0414	0.0481	0.027
109m	0.2500	0.1725	0.1915	0.1891	0.1956	0.173

9. Conclusion

The results for various filters are considered and evaluated by waveforms, power spectrums density (PSD), signal to noise ratio (SNR), Mean square error (MSE) where Kaiser

Window show the best outcome. The order 300 of filters designed showing the best results comparison to order 450 and 600. Hence it can be finalized that Kaiser Windowing shows best outcomes at order 300.

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