Spring 2018

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As the use of wireless technology has increased around the world, radio frequency interference (RFI) has become more and more of a problem for radio astronomers. Preventative measures exist to limit the presence of RFI, and programs exist to remove it from saved data; but the use of algorithms to detect and remove RFI as an observation is occurring is much less common. Such a method would be incredibly useful for observations in which the data must undergo several rounds of processing before being saved, as in pulsar timing studies. Strategies for real-time mitigation have been discussed and tested with simulated data, but ideally the results of any approach would be validated by a detailed comparison of the final data products with and without mitigation applied. The goal of this project is to develop an RFI mitigation approach based on strategies suggested by Buch et al. and to test this program on real data from the observation of pulsar J1713+0747 at the Green Bank Observatory in West Virginia. We use a nedian absolute deviation (MAD) filter to identify interference in the observation and replace the compromised data with random Gaussian noise to match a characteristic radio signal from space. In order to verify our results, we analyze the pulsar's timing residuals obtained both from the mitigated data and from data processed through offline RFI removal software. Comparing the two, our preliminary findings indicate that our program is able to significantly improve the quality of timing results from the observation.