

# Polyphase Filter Banks: A Physicist's Attempt

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## **Abstract**

This report was written for Dr. Dale Gary's Physics 728: Radio Astronomy as a class project, with the goal of explaining what polyphase filter banks are, how they work, and how they help us unlock the secrets of the universe by staring at pretty things in the sky.

It feels necessary to begin with the statement that my learning of electrical engineering has been a shooting gallery of interesting ideas. Thus, this project will read more as a stream of consciousness as I attempt to fill in the gaps in my understanding. As such, this will read much like a question and answer session, with each section being devoted to the first question I came across along the trail of understanding. To begin, a stroll through some basic digital signal processing fundamentals