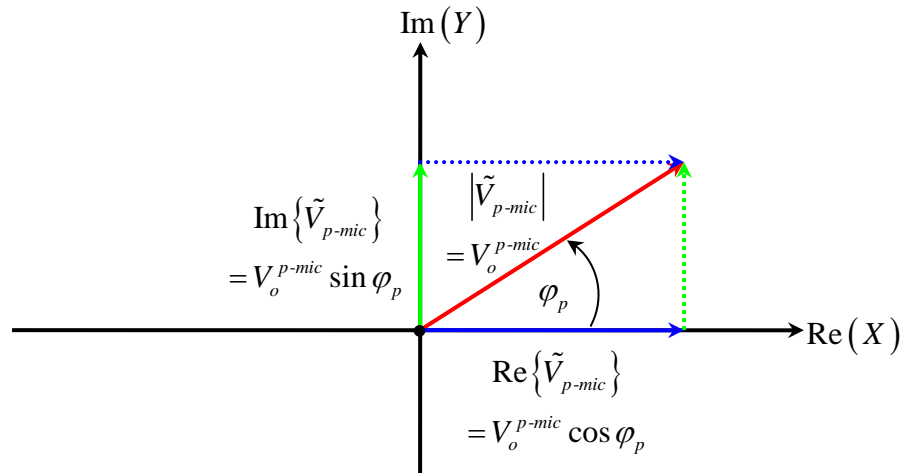


In the 2-D Re-Im complex plane, the complex **frequency-domain** phasor diagram for complex $\tilde{V}_{p-mic}(\vec{r}, \omega_o)$ is **static** (i.e. does not rotate) and appears as shown below:



In the complex **time-domain**, the entire phasor diagram for complex $\tilde{V}_{p-mic}(\vec{r}, t)$ rotates CCW in the complex plane at angular frequency ω_o .

Please see/read Physics 406 Lect. Notes 13 Part 2 for additional details on how lock-in amplifiers work, and their use(s) in the laboratory...

Graphically, the real and imaginary **frequency-domain** components of the complex voltage amplitude signal output from the p -mic might look something like that shown in the figures below, for a **pure** (i.e. single-frequency) sine-wave signal output from the sine-wave generator + power amplifier driving a loudspeaker:

