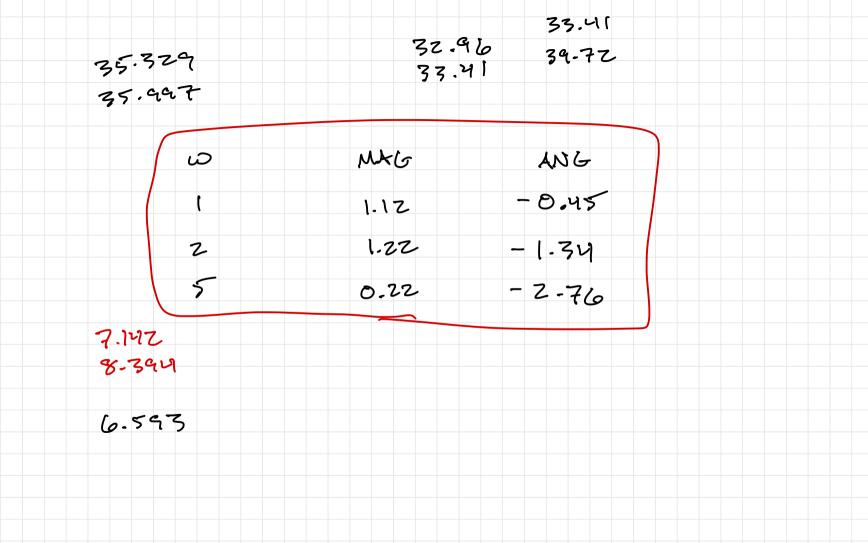
Day 34 Application of frequency response analysis to the drone

AE353 Spring 2022 Bret1



xm = Amxm + Bmum GENERAL RESULT ym = Cm×m transient (decoys zero) $u_m(t) = \frac{1}{2} \sin(\omega t)$ $\Longrightarrow y_m(t) = (...) + \frac{1}{2} H(i\omega) \sin(\omega t + \angle H(i\omega))$ um(+) = cos(w+) => ym(+) = (...) + | H(jw) | cos (w+ < H(jw)) magnitude angle a complex number H(s) = (C(SI-Am) Bm - TRANSFER FUNCTION) I another complex number

$$\dot{x} = A \times + Bu$$

$$\dot{y} = C \times$$

$$\dot{\hat{x}} = A \dot{\hat{x}} + Bu - L (C \dot{x} - y)$$

$$\dot{x} = A \times + B(u_{3ex} - K \dot{x} - x_{dex}))$$

$$\times = A \times + Bu_{3ex} - BK (\times err + x) + BK \times_{3ex}$$

$$= (A - Bk) \times - BK \times err + Bu_{3ex} + BK \times_{3ex}$$

$$= (A - Bk) \times - BK \times err - (A - Bk) \times_{3ex}$$

$$= (A - Bk) \times - BK \times err - (A - Bk) \times_{3ex}$$

$$= (A - Bk) \times - BK \times err - (A - Bk) \times_{3ex}$$

$$= (A - LC) \times err$$

$$\dot{x} = A - LC - (X - R) \times_{3ex}$$

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Converting to/from "decibels" (dB)

absolute dB

-> ZO logio m

M

2