

Example of partial
fraction use to design
a given (real-rational)

$$T(s) = \frac{N(s)}{D(s)} ; \text{ assume } \text{degree } N < \text{degree } D$$

factor $D(s)$ & make a
partial fraction expansion
factor $N(s)$ & associate term.
(if do a product = cascade)

Ex:

$$T(s) = \frac{3s + 5}{(s+2)(s^2 + 4s + 6)}$$

$$= \frac{g_2}{s+2} + \frac{g_1 s + g_0}{s^2 + 4s + 6}$$

derive the g_i .