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EECS 16B Thursday Feb 13 2020 Intro to Phasors
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          1:48 PM
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 Lost Time: Inductors and LRC ckt
  Phacors: ubiquetous method for understanding
      response to sinusvidal inputs
    * in porticular, calculating porticular
          response giren sinus vidal input
       みい。ニートしい、ナヤンは、アマート
2 With Uin = Vincosut, I chected.
 * Essier cale milially: U, = Vest
        guess U = V est
       sVoeit = - to Voeit + to The
       3 Bock to time respos
    5= Veit + Aext
                       Cosinstan to
          resp s: neg real 2
          ext -> tends to zero vi t-soo
    est ~> s=jw; ejm = cosmt+; sin nt
    cos wt = Re (eint) = Re[cosut+jsinwt]
  Consider inputs like
       cos wt = \frac{1}{2} (e^{jwt} + e^{-jwt})
        sin wt = = 1 (eint + eint)
   Myet ! " bhorows
     x(t) = A cos(w++ x)
          = Re (A ei(wtax))
         = Re (Aeixieint)
     Phoser is complex mumber that has amplitude and phase info. for time waveto
           rory by troin
s Facts:
   1) uniqueness; 2) linewity; 3) lifferentiation
1) Nuicl nivers
                                  Aeix
     x (t) = A coo(w++/)
                                   complan
    x, (t) = Re(A,eint) ()
                complex #
     X2 (t) = Re (A2 ejut)
6 Mr. guenas
(+) if X,(+) = X2(+) =) A, = A2
      A_1 = A_2 = X_1(x) - X_2(x)
      Re(A,ejue) = Re(A,ejut)
        x, (1) = Re (A, e) " )
        X_{2}(t) = Re(A_{2}e^{\int_{0}^{t}})
  check at t=0 => x,6) = Re(A.)
                    \chi_{2}(0) = Re(A_{2})
    Re(Ai) = Re(Az)
 * check it t= = = in
     X_{i}\left(\frac{\pi}{2}\frac{1}{\omega}\right) = R_{e}\left(A_{i}e^{i\frac{\pi}{2}}\right)
      K2 (= 1) = Re(A,e)
  Eular: ej型= cos型, sin是=j
      Re(A,j) = Re(Azj)
  Re[Re(A.)j + jIm(A.)]=Re[Re(A.)j-Im/A)
Costity (a., az real) phonon
                        Co a, A, ta, A,
  a, x, (t) + a2 x2(t)
 (x, \epsilon) = Re(A, e^{j\omega t})
                           (a, x, (e) + a2 x, e)
                            = Re ((a, A, +a, A, 2)
 \chi_{2}(t) = Re(A_{2}e^{int})
|a,\chi,(t)| = Re(a,A,e^{jut})
+(a,\chi,(t)) = Re(a,A,e^{jut})
            Rel ) + Rel
              = Re ([a, A, + a, A,] eja!)
(3) Difterintiation
     x(t) = Re(Acjut)
         Jt X(F)
  · Can apply directly to chtc
        K Sik=0 N SIK=0
 11 Elements
                        I=jCV
        レラサ ビーレジャントラルLI
  U, () = Re (V, eint)
        = Re ( 1 + jwcr Vin ejut
                   U, (t) = V; cos(wt)
15 unsle calc: 1 + jw CR
   U, (t) = Re (V, eint)
- Re \(\frac{V_{in}}{|H_{juck}|}\)
 U_(t) = \frac{V_{in}}{|t+jwcR|} . cos(wt-tan-1(wcR))
             introduces os filter
 16 CKT WOX
  Mognitude function
                   majnituse | Vo | ≈ | V... |
  low frequery:
   (w RC) < < 1
                             17.12 - WRC [V.m]
   (wRC)>>1
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