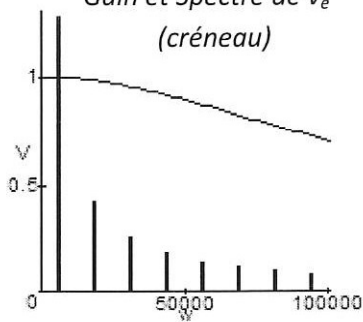


$$\omega_{\text{coupure du filtre}} = 10^5 \text{ rad/s} \gg \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s}$$

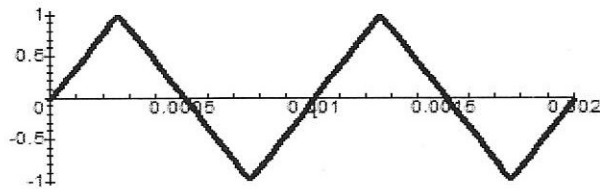
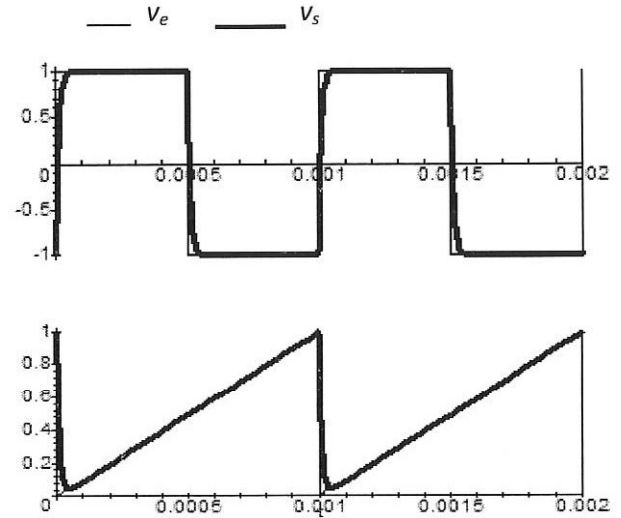
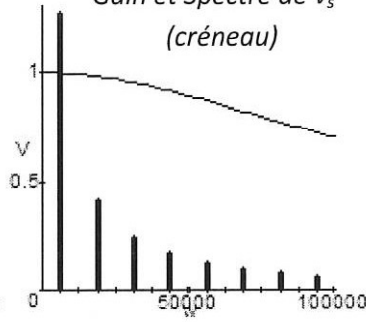
FILTRE PASSE BAS

DU 1^{ER} ORDRE

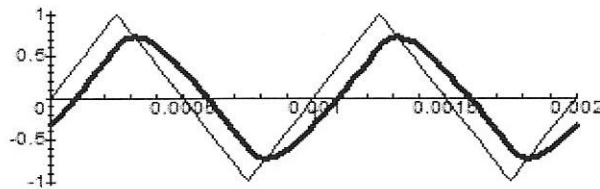
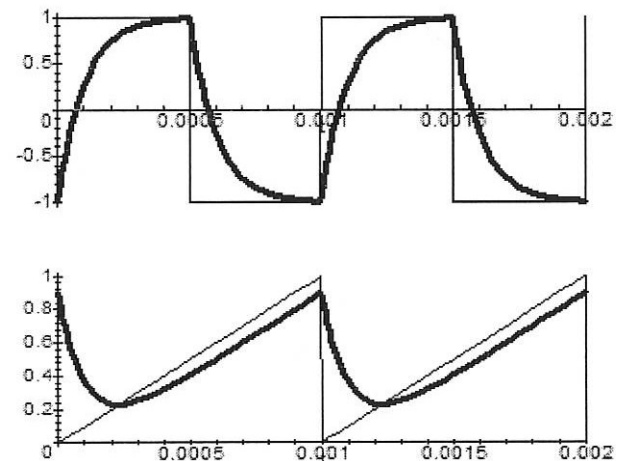
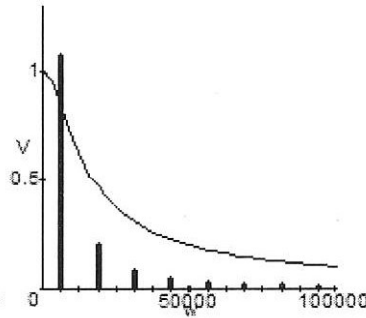
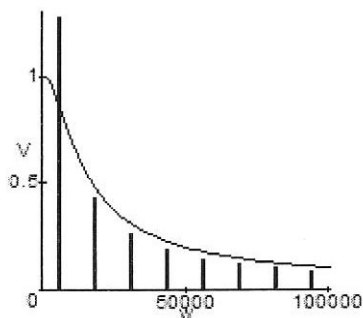
Gain et Spectre de v_e
(créneau)



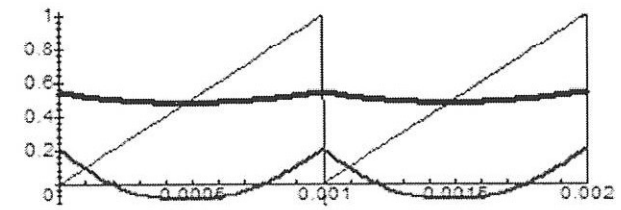
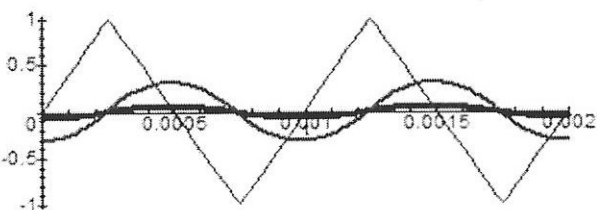
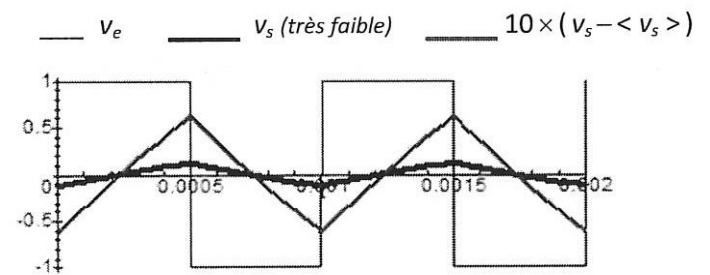
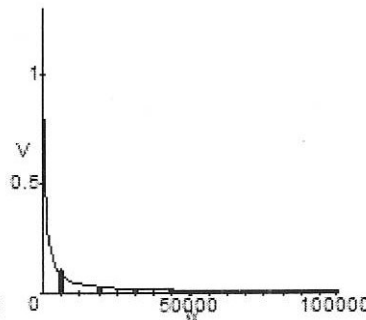
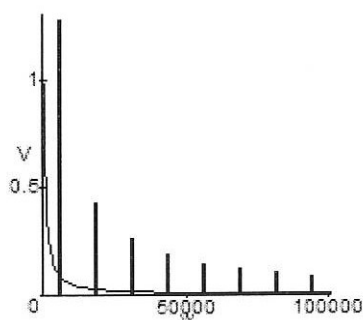
Gain et Spectre de v_s
(créneau)



$$\omega_{\text{coupure du filtre}} = 10^4 \text{ rad/s} \approx \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s}$$



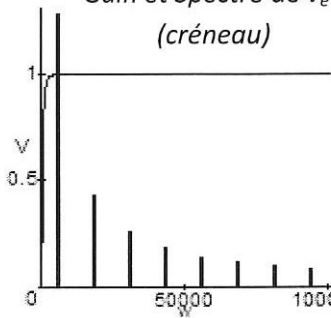
$$\omega_{\text{coupure du filtre}} = 5 \cdot 10^2 \text{ rad/s} \ll \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s}$$



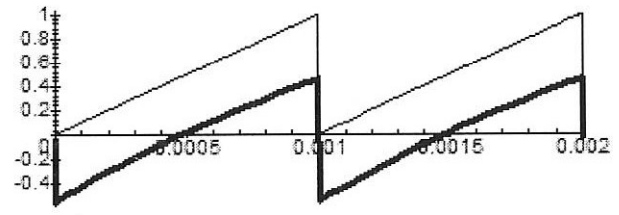
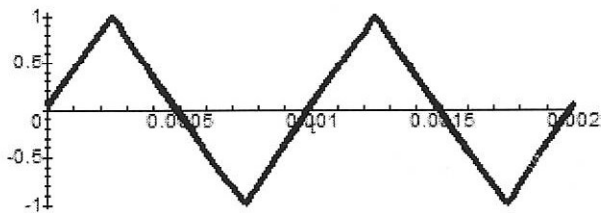
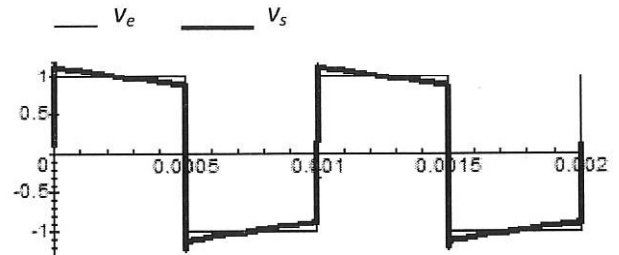
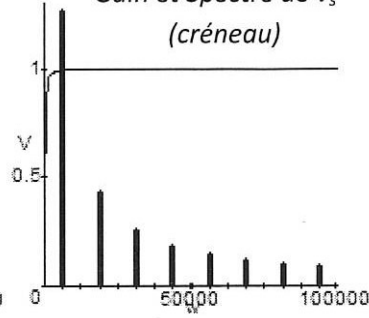
$$\omega_{\text{coupure du filtre}} = 5 \cdot 10^2 \text{ rad/s} \ll \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s}$$

FILTRE PASSE HAUT DU 1^{ER} ORDRE

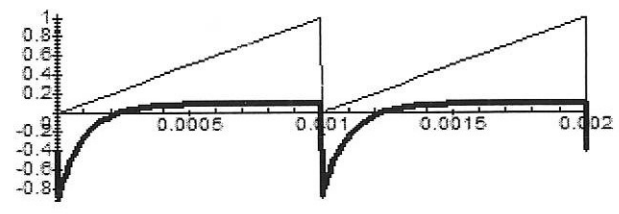
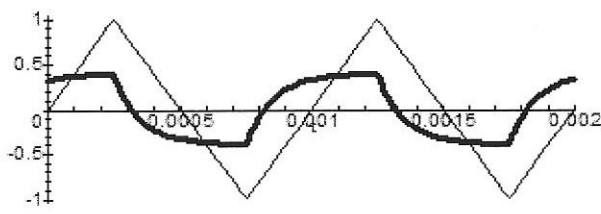
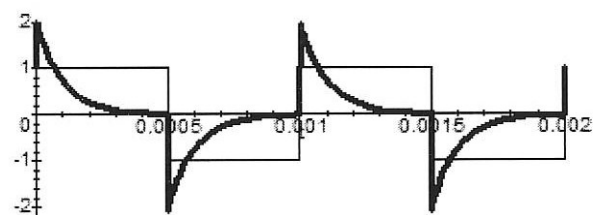
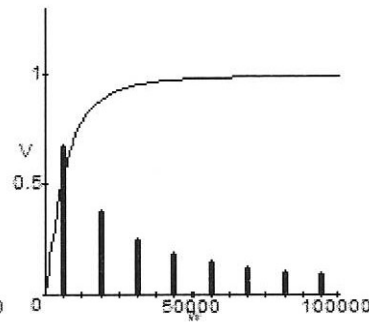
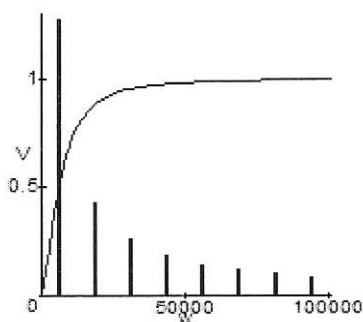
Gain et Spectre de v_e
(créneau)



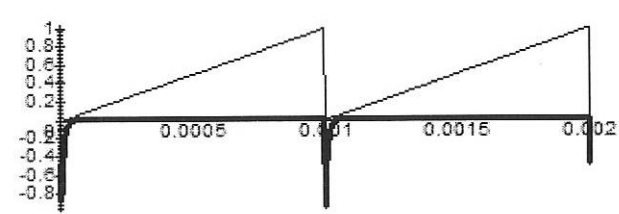
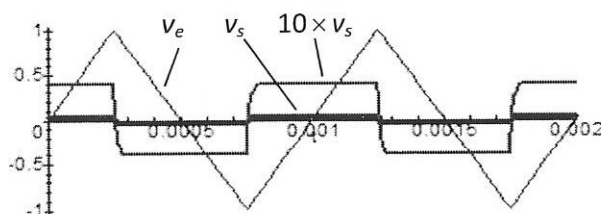
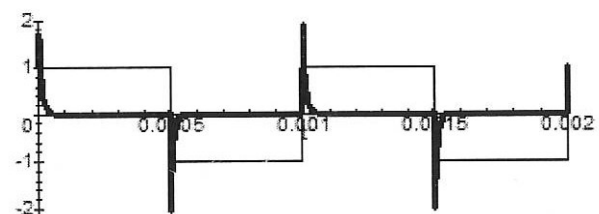
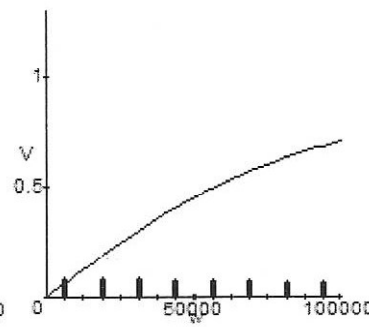
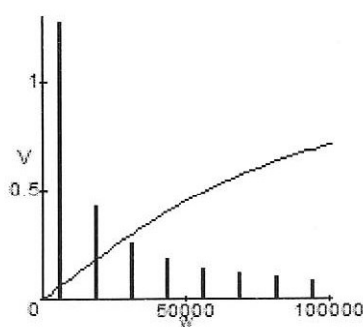
Gain et Spectre de v_s
(créneau)



$$\omega_{\text{coupure du filtre}} = 10^4 \text{ rad/s} \approx \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s}$$



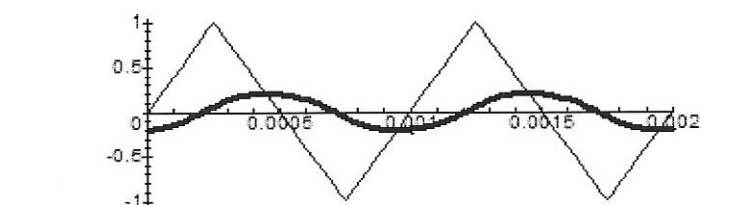
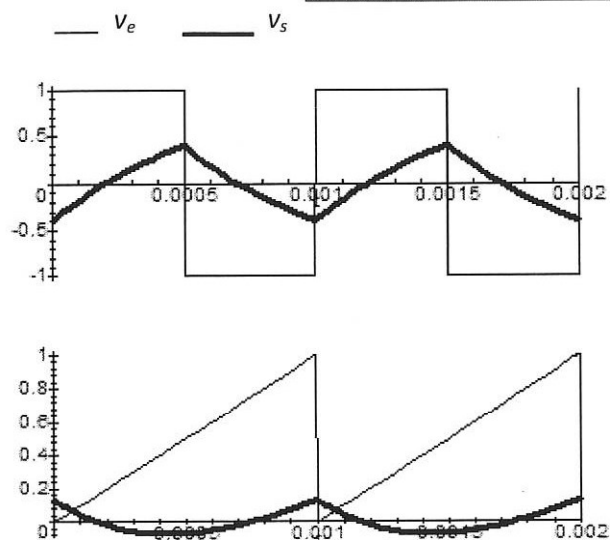
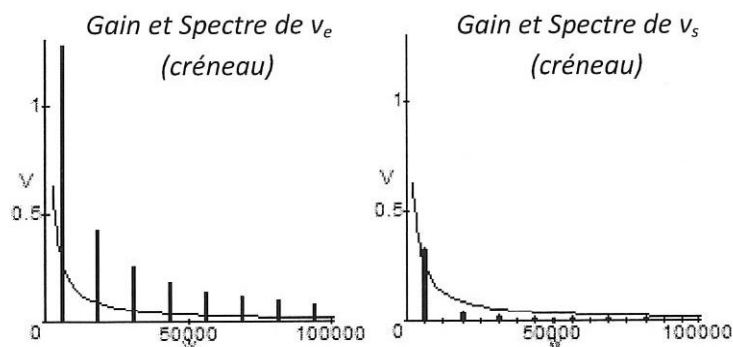
$$\omega_{\text{coupure du filtre}} = 10^5 \text{ rad/s} \gg \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s}$$



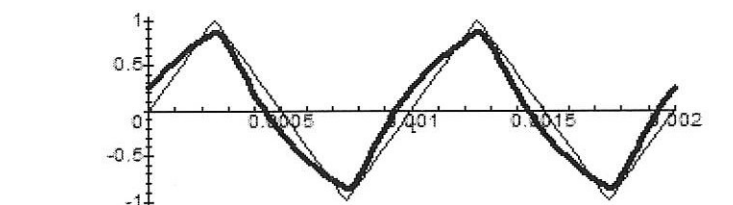
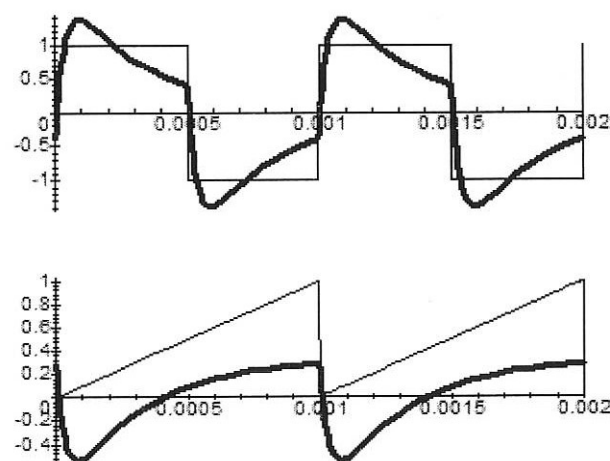
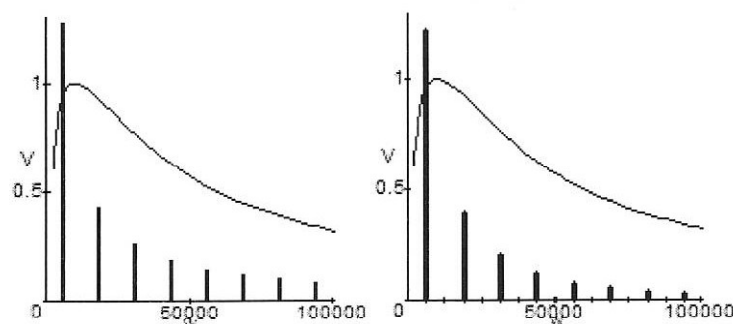
$\omega_{\text{résonance du filtre}} = 5 \cdot 10^2 \text{ rad/s} \ll \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s} \quad \& \quad Q = 0,3$

FILTRE PASSE BANDE

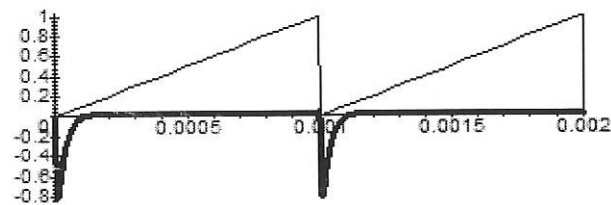
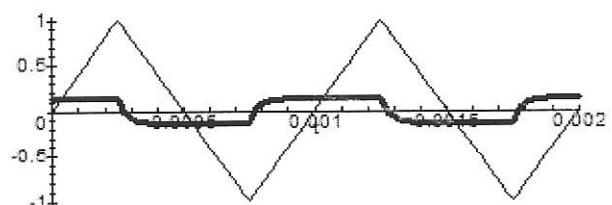
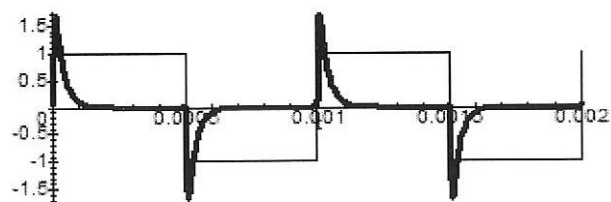
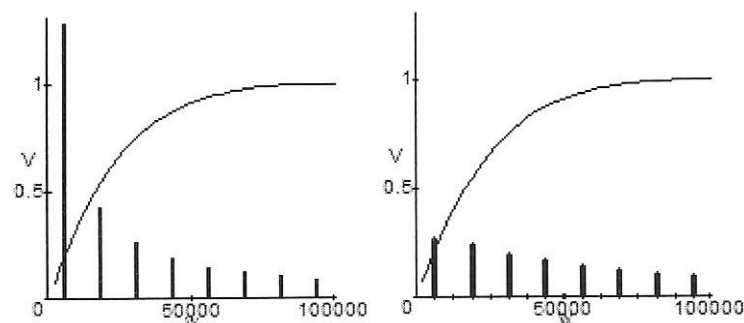
(ordre 2) **PEU SELECTIF**



$\omega_{\text{résonance du filtre}} = 10^4 \text{ rad/s} \approx \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s} \quad \& \quad Q = 0,3$



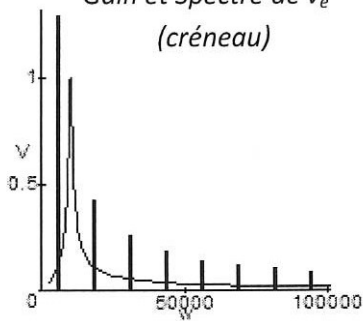
$\omega_{\text{résonance du filtre}} = 10^5 \text{ rad/s} \gg \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s} \quad \& \quad Q = 0,3$



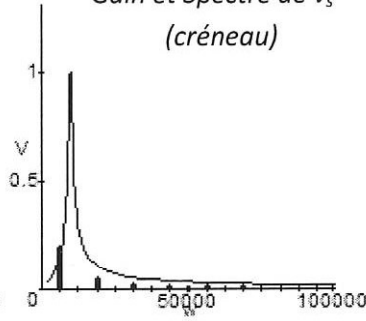
$$\omega_{\text{résonance du filtre}} = 10^4 \text{ rad/s} \approx \omega_{\text{fondamental } v_e} = 6 \cdot 10^3 \text{ rad/s} \quad \& \quad Q = 7$$

FILTRE PASSE BANDE
(ordre 2) SELECTIF

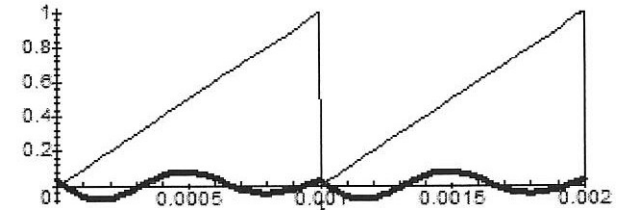
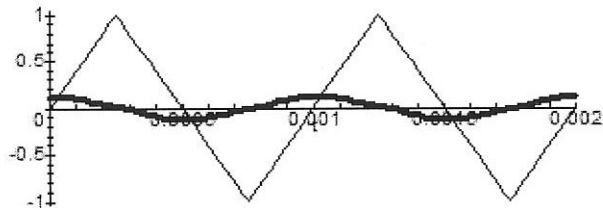
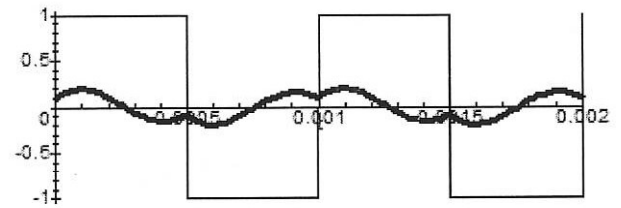
Gain et Spectre de v_e
(créneau)



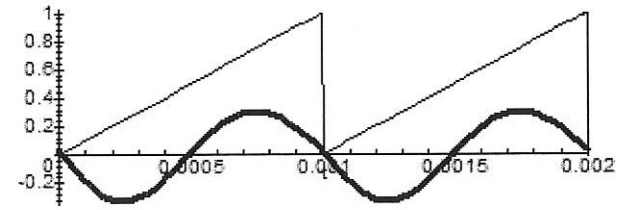
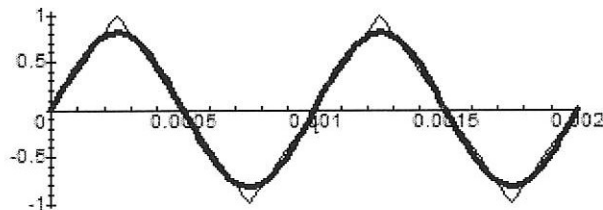
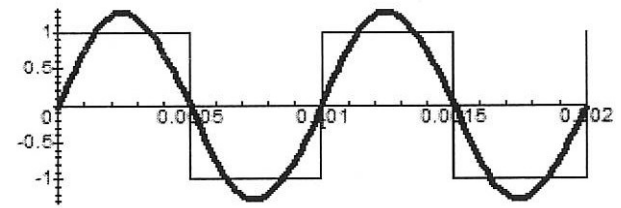
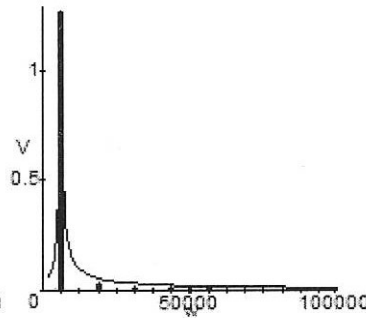
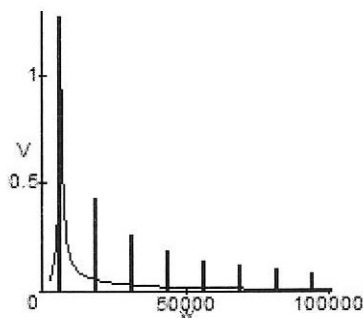
Gain et Spectre de v_s
(créneau)



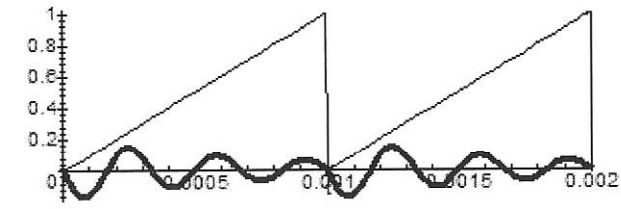
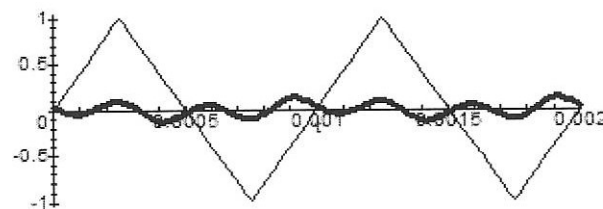
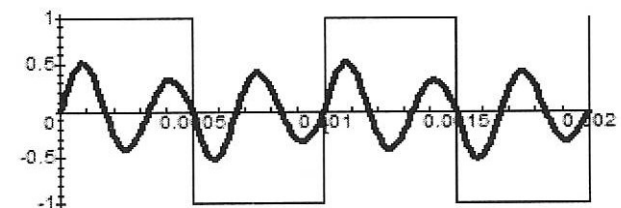
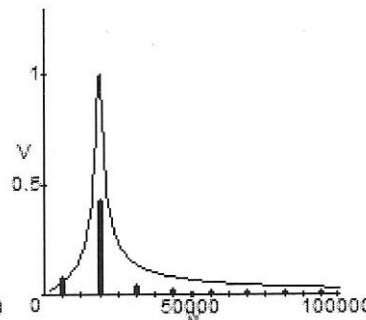
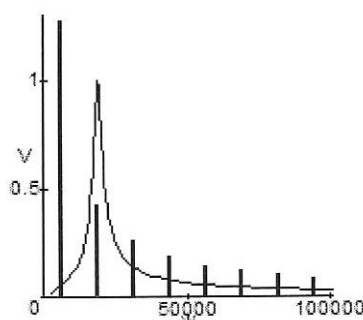
— v_e — v_s



$$\omega_{\text{résonance du filtre}} = \omega_{\text{fondamental } v_e} \quad \& \quad Q = 7$$



$$\omega_{\text{résonance du filtre}} = 3 \times \omega_{\text{fondamental } v_e} \quad \& \quad Q = 7$$

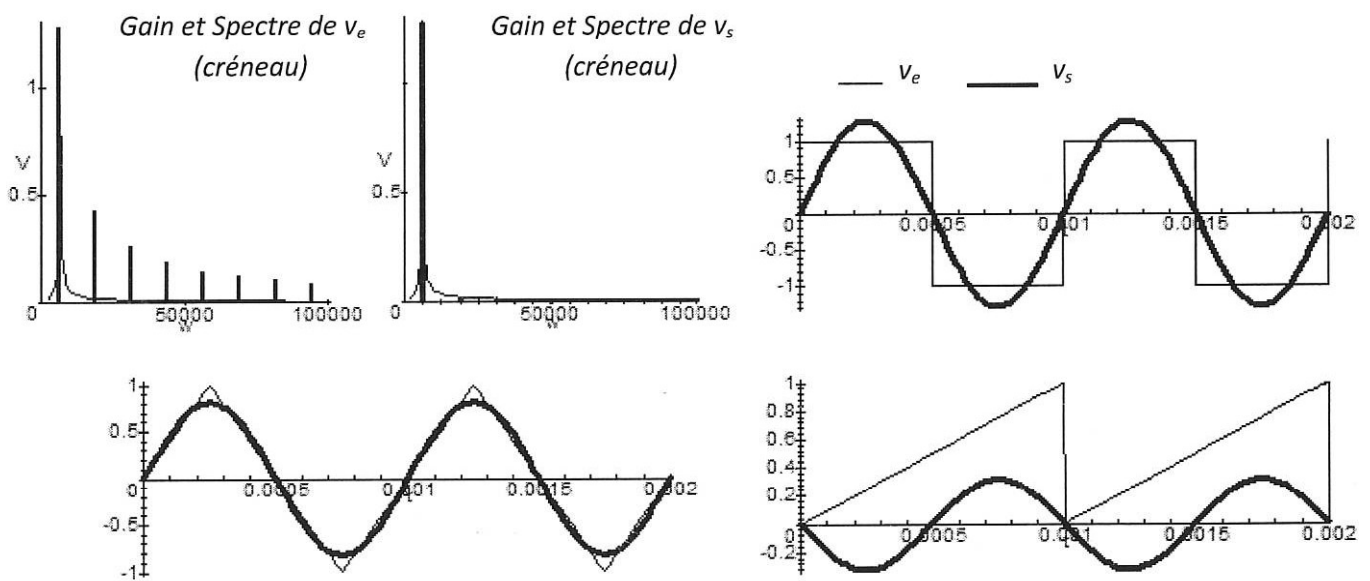


FILTRE PASSE BANDE TRES SELECTIF ANALYSEUR DE SPECTRE

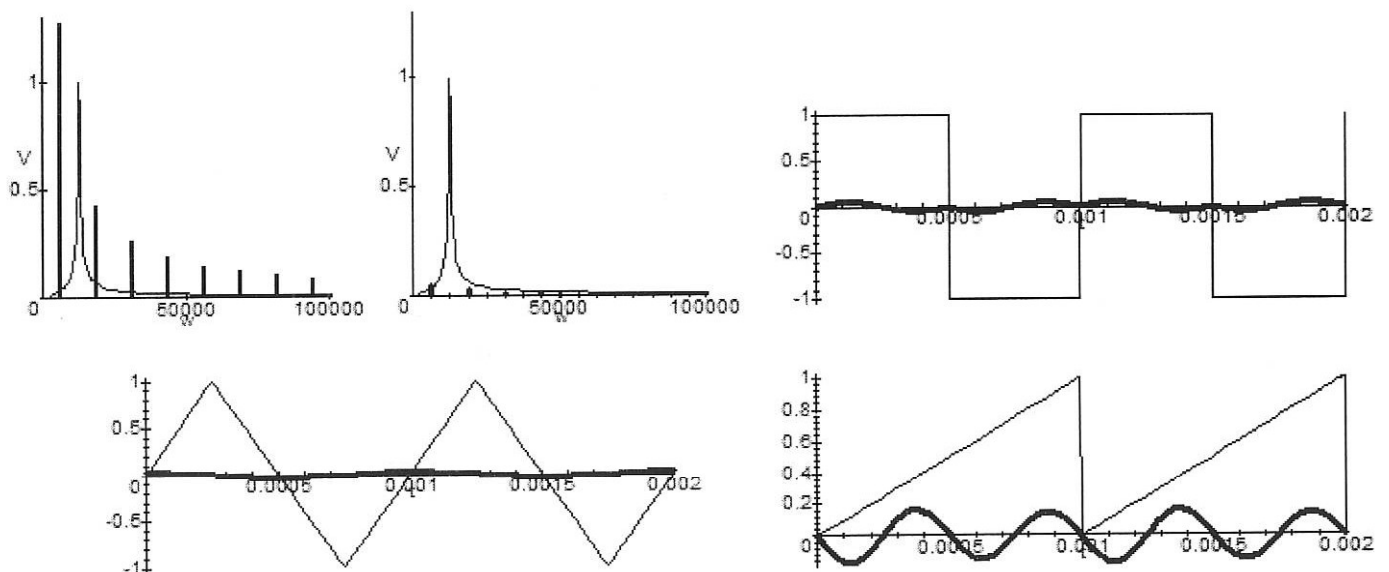
Un analyseur de spectre est un filtre passe-bande très sélectif, de fréquence centrale f_0 réglable.

En faisant varier lentement f_0 , on obtient en sortie un signal notable uniquement si f_0 coïncide avec une harmonique du spectre du signal d'entrée. On peut alors mesurer l'amplitude du signal de sortie et en déduire l'amplitude de cette harmonique en divisant par le gain maximal du filtre.

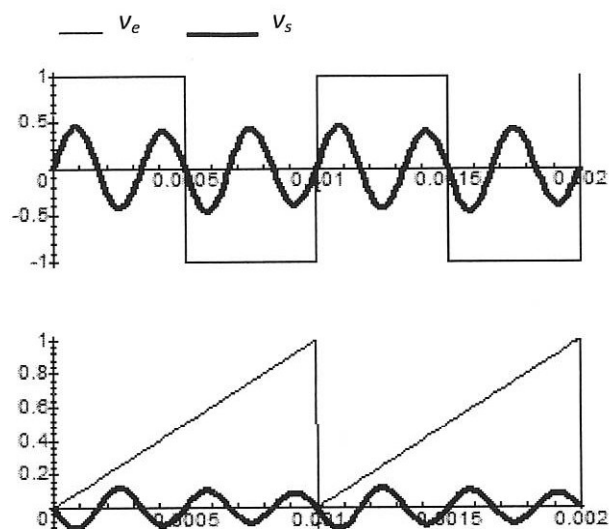
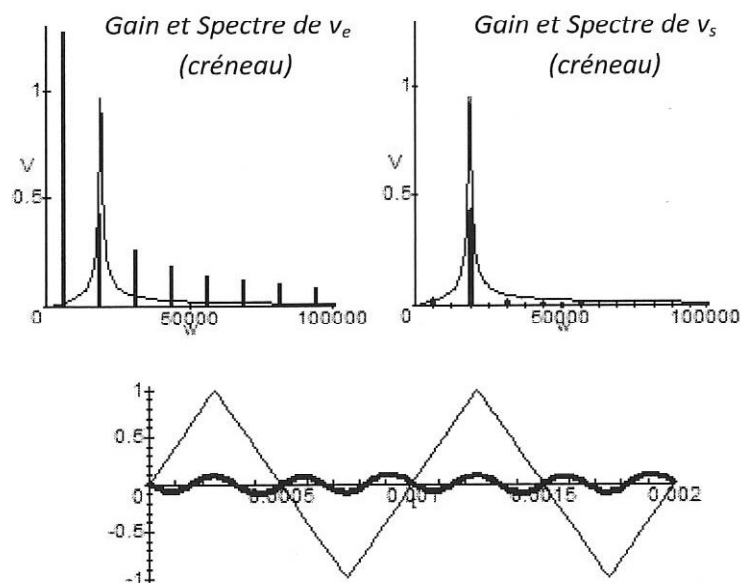
$$\omega_{\text{résonance du filtre}} = \omega_{\text{fondamental ve}} \quad \& \quad Q = 20$$



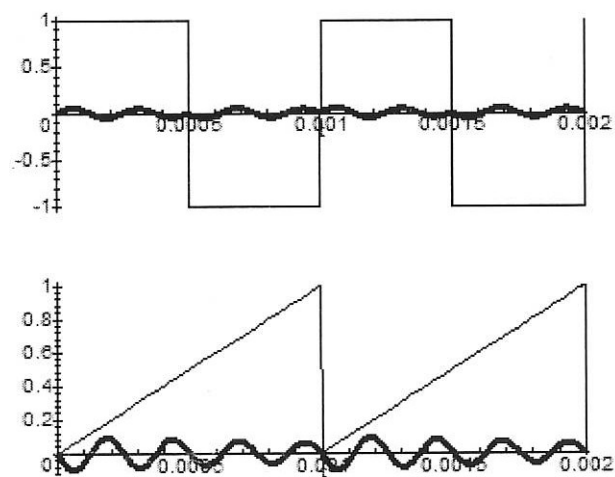
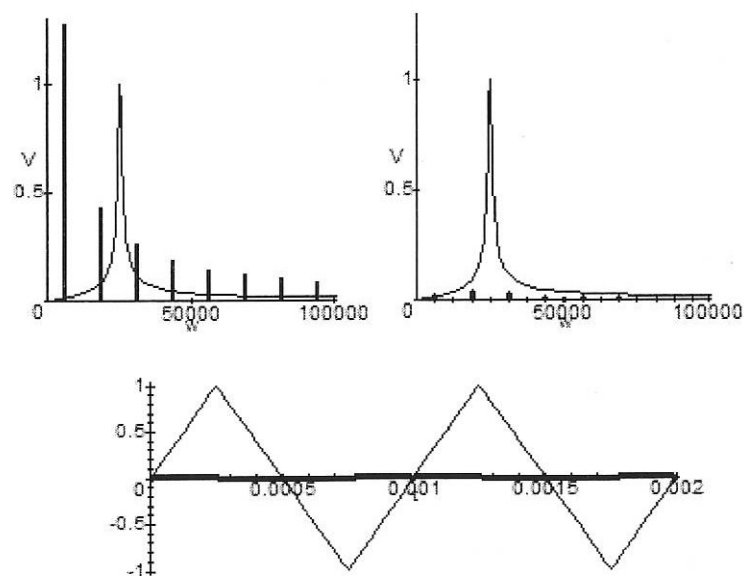
$$\omega_{\text{résonance du filtre}} = 2 \times \omega_{\text{fondamental ve}} \quad \& \quad Q = 20$$



$$\omega_{\text{résonance du filtre}} = 3 \times \omega_{\text{fondamental ve}} \quad \& \quad Q = 20$$



$$\omega_{\text{résonance du filtre}} = 4 \times \omega_{\text{fondamental ve}} \quad \& \quad Q = 20$$



$$\omega_{\text{résonance du filtre}} = 5 \times \omega_{\text{fondamental ve}} \quad \& \quad Q = 20$$

