

EJEMPLOS

DE

DEFORMACIONES

EN

DIAGRAMAS DE FASE

AL HACER

$B \xrightarrow{P} A$

Ejemplo:

variación del diagr.

de fase de un pto de

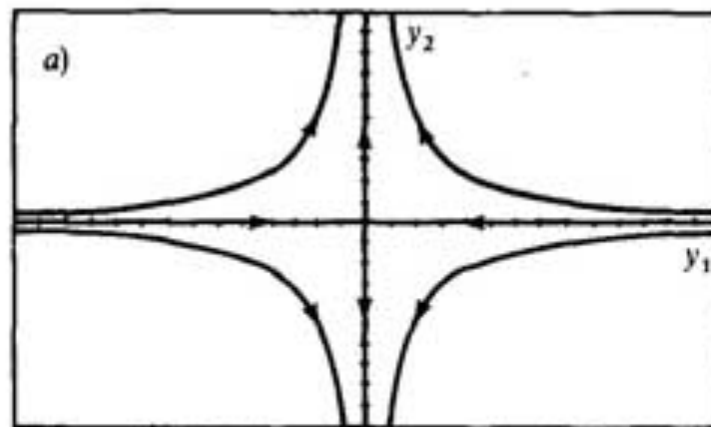
silla al variar los

vectores v_1, v_2

(en este caso autovectores
de A).

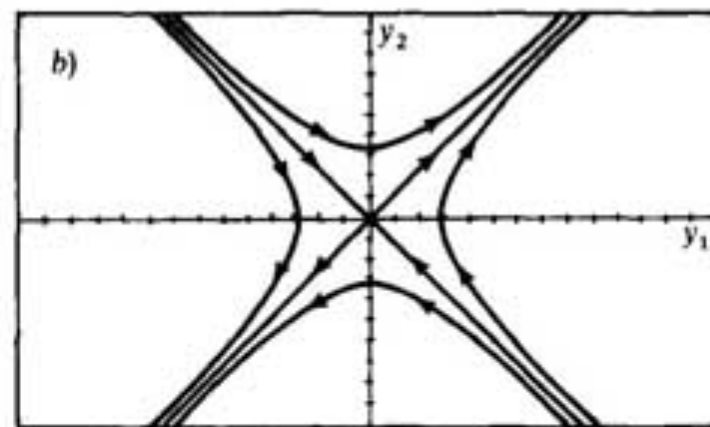
(Ilustración de:

C. Fernández,
Ec. dif. I.)



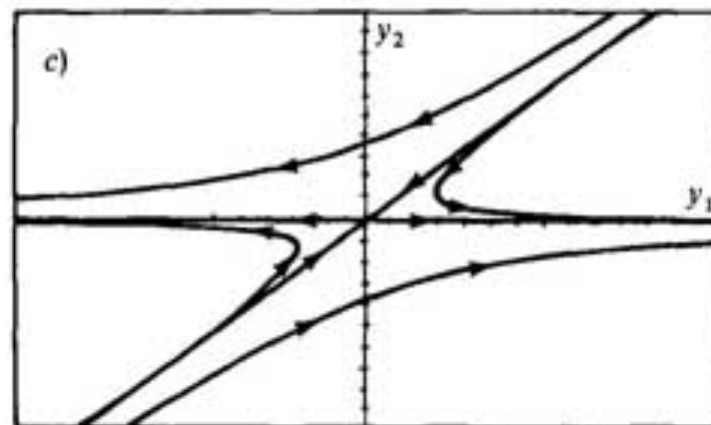
$$v^1 = (0, 1)$$

$$v^2 = (1, 0)$$



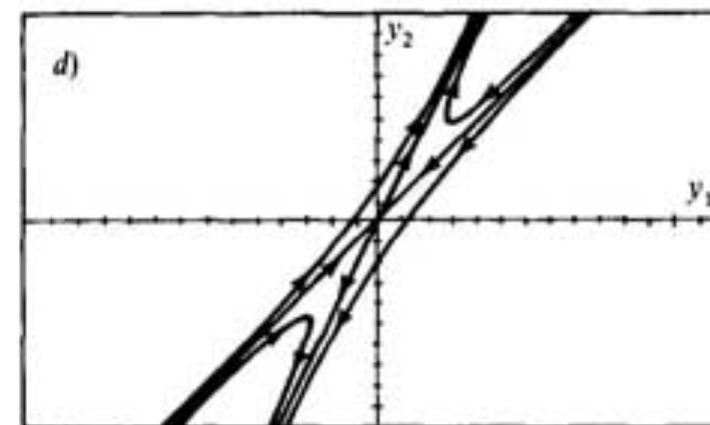
$$v^1 = (1, 1)$$

$$v^2 = (-1, 1)$$



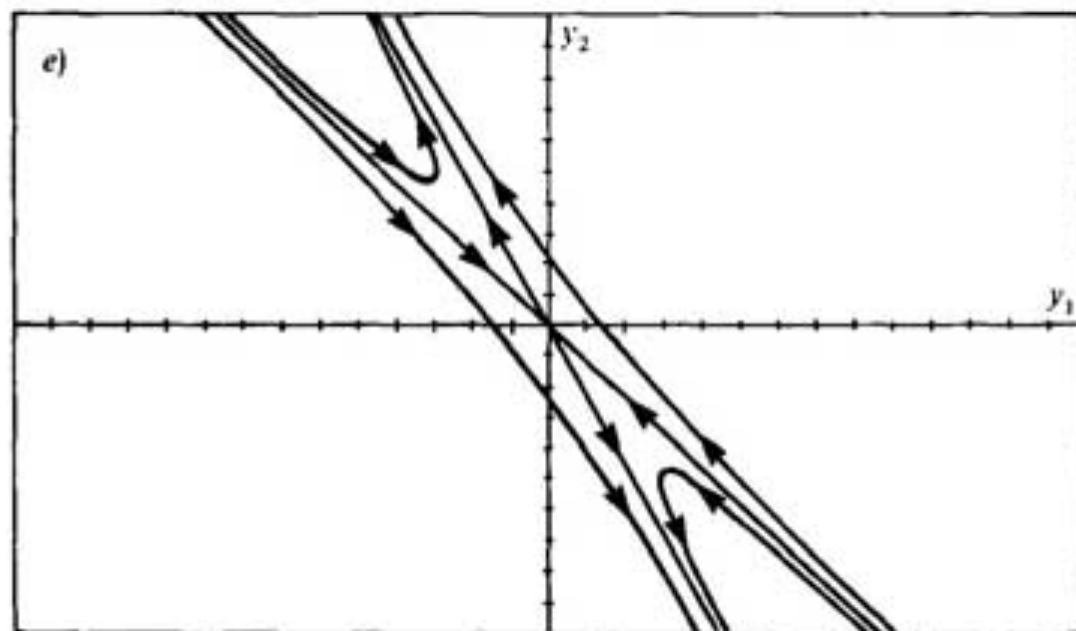
$$v^1 = (1, 0)$$

$$v^2 = (1, 1)$$



$$v^1 = (1, 2)$$

$$v^2 = (1, 1)$$



$$v^1 = (1, -2)$$

$$v^2 = (-1, 1)$$

Ejemplo:

variación del diag.
de jese de los nodos.

(notación: $E(\lambda)$ = autovector
asociado a λ)

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Ec. dif. I.)

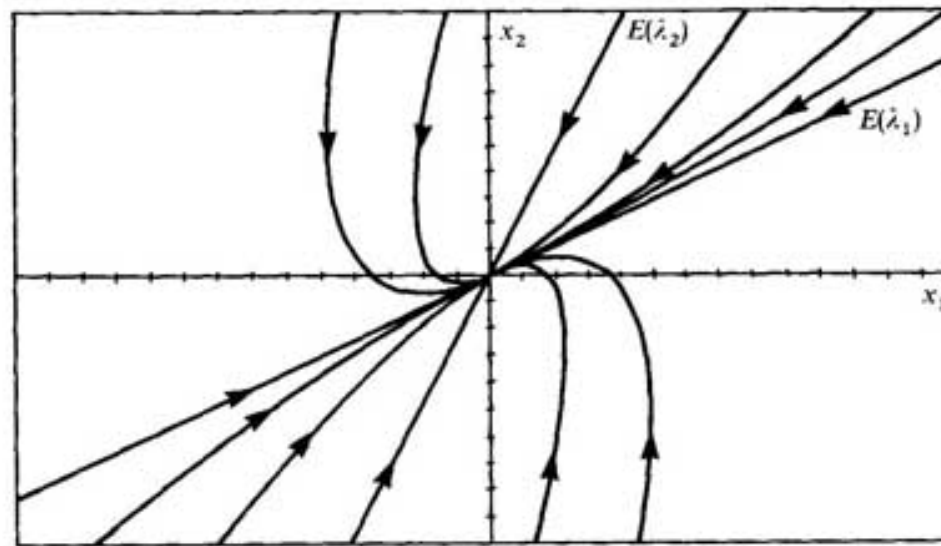


Figura 21.—Nodo estable ($\lambda_2 < \lambda_1 < 0$).

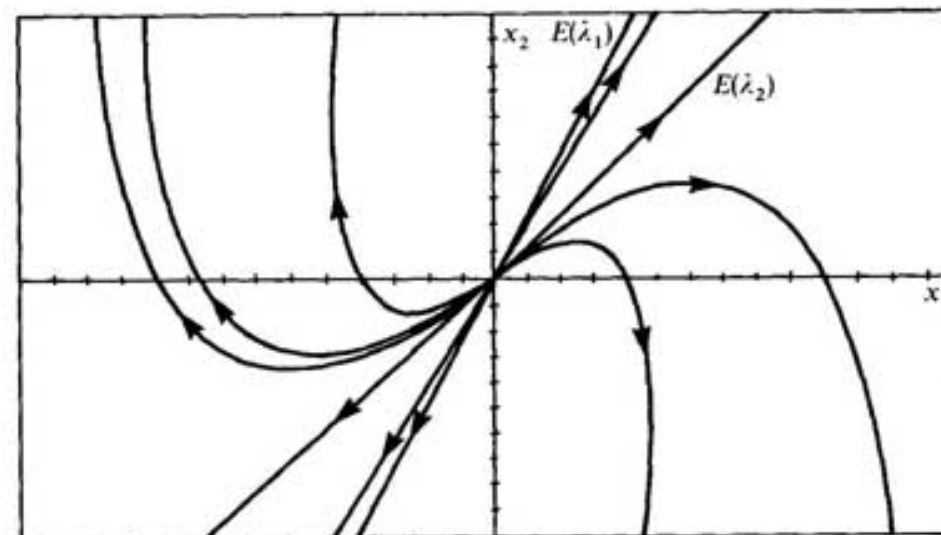


Figura 22.—Nodo inestable ($0 < \lambda_2 < \lambda_1$).

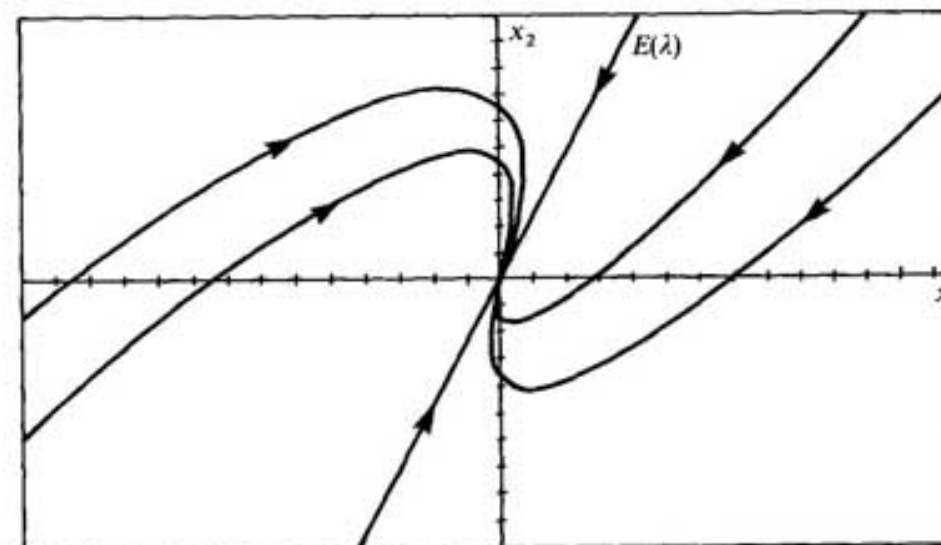


Figura 23.—Nodo impropio estable ($\lambda < 0$).

Más ejemplos:

(Ilustración de:

C. Fernández, Ec. dif I)

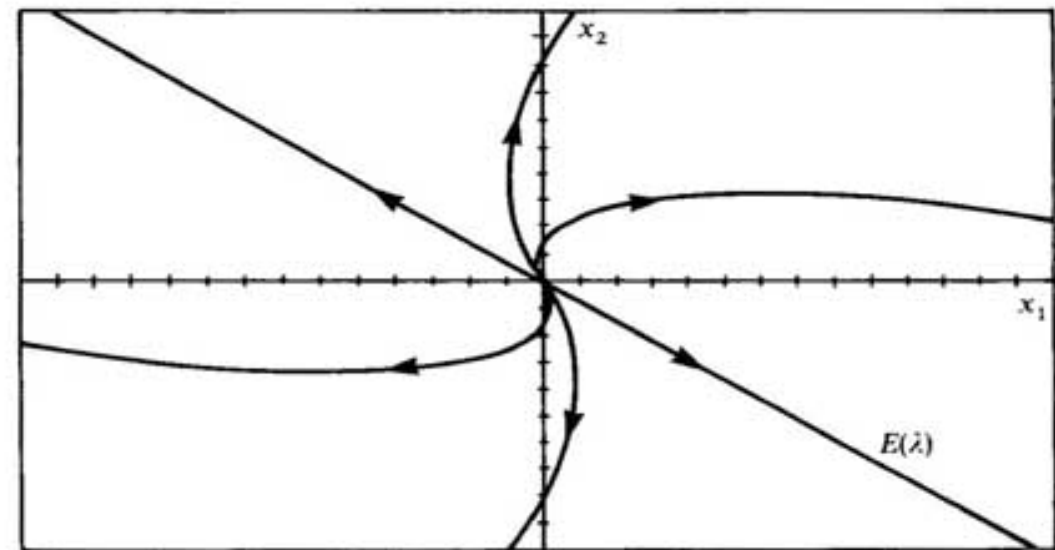


Figura 24.—Nodo impropio inestable ($\lambda > 0$).

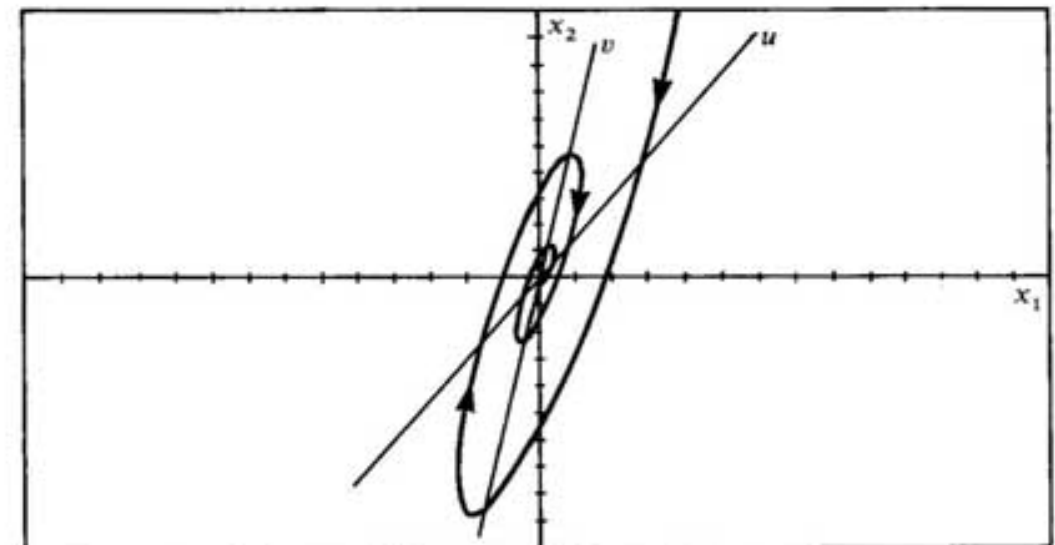


Figura 25.—Espiral estable ($a \pm bi$, $a < 0$, $b > 0$).

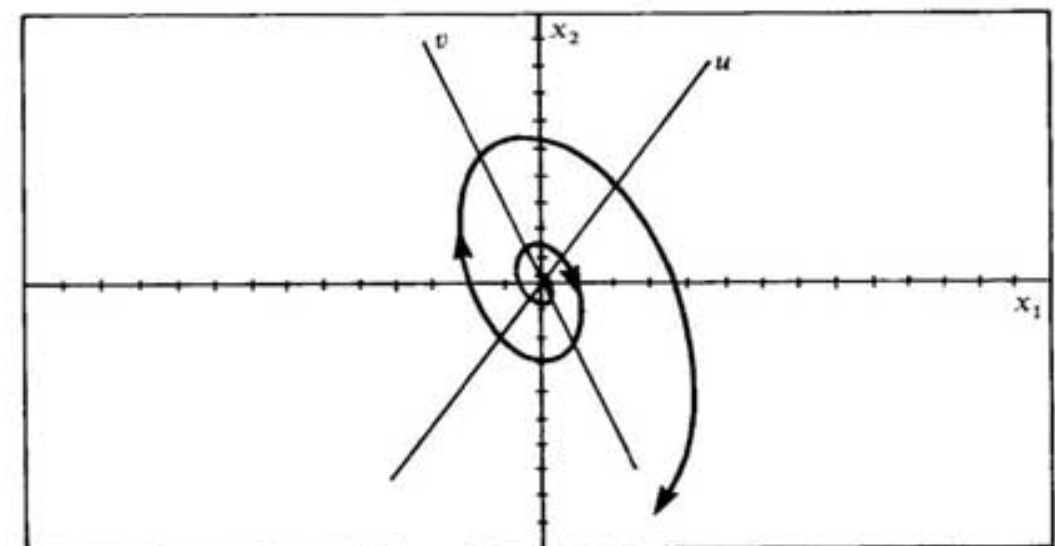


Figura 26.—Espiral inestable ($a \pm bi$, $a > 0$, $b > 0$).

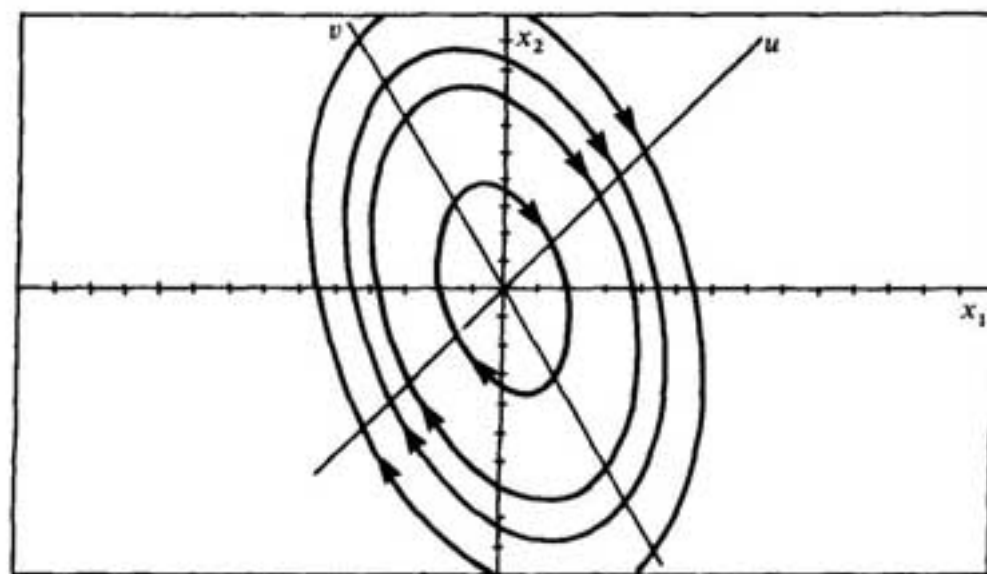


Figura 27.—Centro ($\pm bi$, $b > 0$).

$\varphi = (u, v)$ en

