Draghilev's method. Examples. Viacheslav N. Mezentsev, viacheslavmezentsev@ya.ru

Draghilev's method

$f1(x,y) := 4\cdot(y-1)^2+(x-1)^2-1$

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$f2(x,y) := y - x\cdot\sin(25\cdot x)$

$$F(X) := \begin{bmatrix} x := X_1 \quad y := X_2 \end{bmatrix} \\ \begin{bmatrix} f1(x,y) \\ f2(x,y) \end{bmatrix}$$

$X_0 := \text{stack}(0.4, 0.58)$ $t_{min} := 0$ $t_{max} := 0.9$ $N := 150$

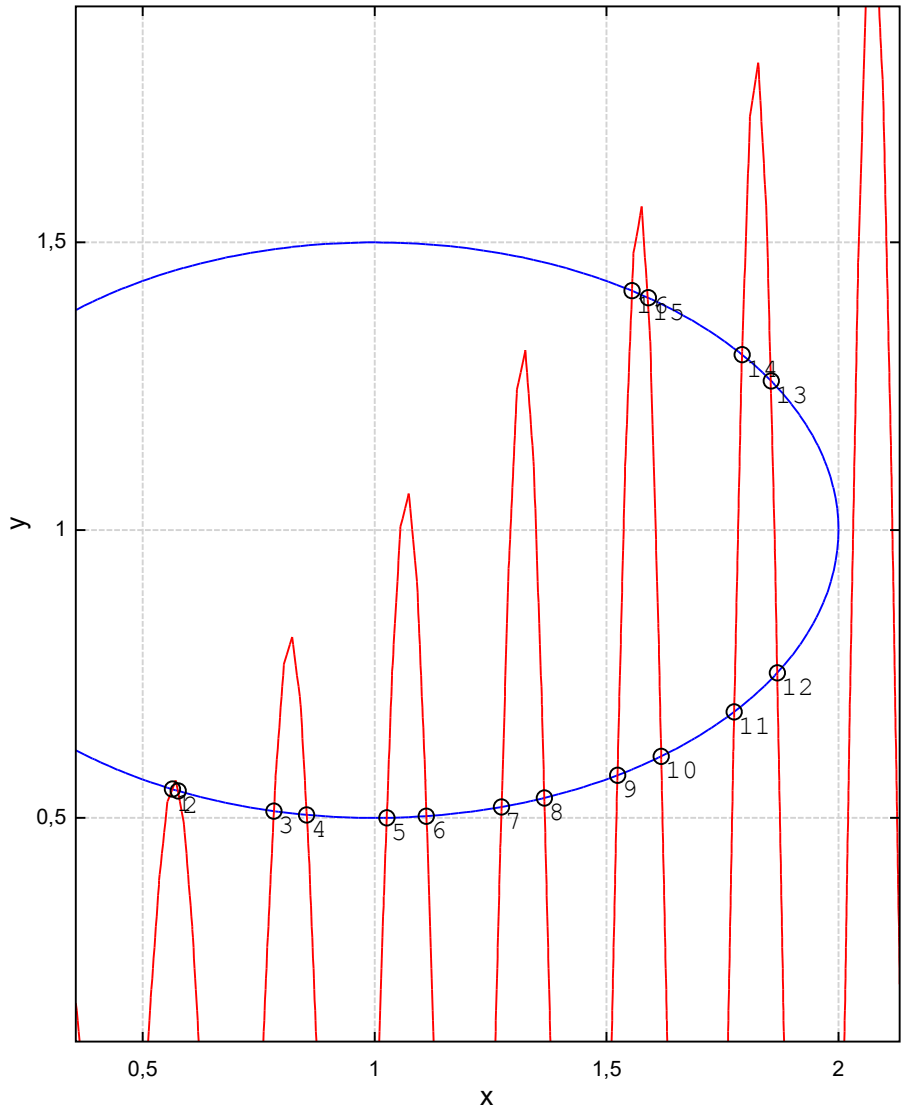
$result := Draghilev(F(X), X_0, t_{min}, t_{max}, N)$

$k := \text{rows}(result)$ $k = 16$

$XY := result_{[1..k][1..2]}$

for $m \in [1..k]$ for $m \in [1..k]$

$o\_O_m := \text{"o"}$ $o\_\#_m := \text{num2str}(m)$



$$XY = \begin{bmatrix} 0.564 & 0.5501 \\ 0.5764 & 0.5471 \\ 0.7826 & 0.512 \\ 0.8535 & 0.5054 \\ 1.0263 & 0.5002 \\ 1.1117 & 0.5032 \\ 1.2735 & 0.5191 \\ 1.3662 & 0.5347 \\ 1.5237 & 0.5742 \\ 1.6179 & 0.6069 \\ 1.7752 & 0.6843 \\ 1.8684 & 0.752 \\ 1.855 & 1.2593 \\ 1.7923 & 1.3049 \\ 1.59 & 1.4037 \\ 1.5549 & 1.4159 \end{bmatrix}$$

$$\begin{cases} f1(x,y) \\ f2(x,y) \\ \text{augment}(XY, o\_O) \\ \text{augment}(XY, o\_\#) \end{cases}$$