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3. :
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• [3].

1. / , 2003. - 360 . -

2. VII
- « , 2006. -

3. VII - « , 2006. -

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80-

80-

[2].

[2,3,4],

$$\frac{\partial x}{\partial t} = \frac{\partial q_x}{\partial x}$$

q_x

$$\left(\frac{\partial q_x}{\partial x}\right) > 0$$

$$\left(\frac{\partial x}{\partial t}\right) > 0,$$

q_x ,

(Fredsoe et al., 1985; Broker et al., 1991).

(Bailard, 1981; Roelvink, Stive, 1989; Ohnaka, Watanabe, 1990; Roelvink, Broker, 1993; , 1999, 2000). 1981

(Bailard, 1981).

(Kos'yan et al., 1997a; Kuznetsov, Pykhov, 1998)

(Kos'yan et al., 1997).

(Hanes, Huntley, 1986; Osborne, Greenwood, 1992, 1993; Kos'yan et al., 1994; , 1997);

Kos'yan et al., 1997).

(Pykhov, Kos'yan, Kuznetsov, 1995;

(Larson, Kraus, 1989; Roelvink, Stive, 1989; Wang, Miao, Lin, 1992; Newe, Dette, 1995; Roelvink et al., 1995).

(Sonu, 1972, Stive, Wind, 1986; Svendsen et al., 1987; Okayasu, Katayama, 1992).

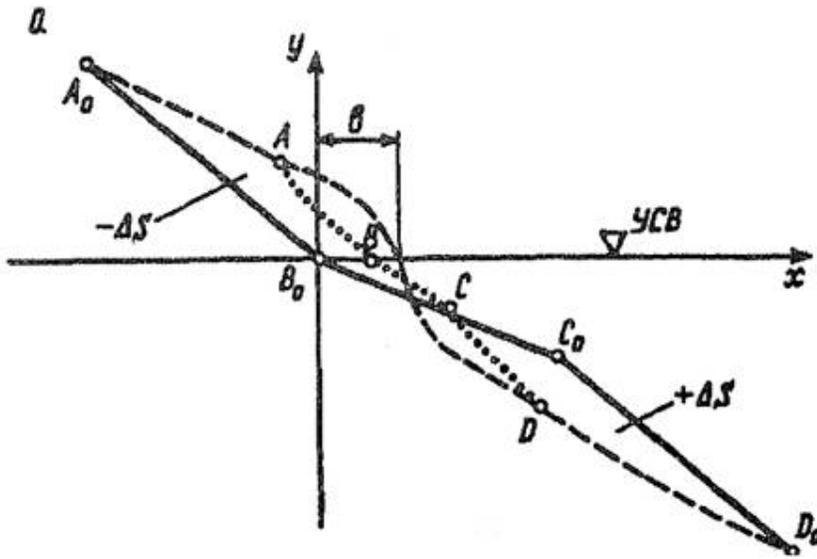
(Kriebel, Dean, 1985),

(Larson, Kraus, 1989),

q_x

[1].

((.1).); -



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(., 1984).

(x,),

b, (),

; C - ; D -

(

, CD -

AB - , BC -

: b -

, ±ΔS -

[1) b, $+ \Delta S = | - \Delta S |$,

$$b = \frac{1}{3} \frac{h_{p1\%}^{1.5}}{\bar{d}^{0.5}} \cos \alpha_p,$$

$$\pm \Delta S = \frac{1}{6} \frac{h_{p1\%}^{2.5}}{\bar{d}^{0.5}} \cos \alpha_p$$

, $h_{p1\%}$ -

1% -

(); \bar{d} -

; α_p -

, 1982).

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