

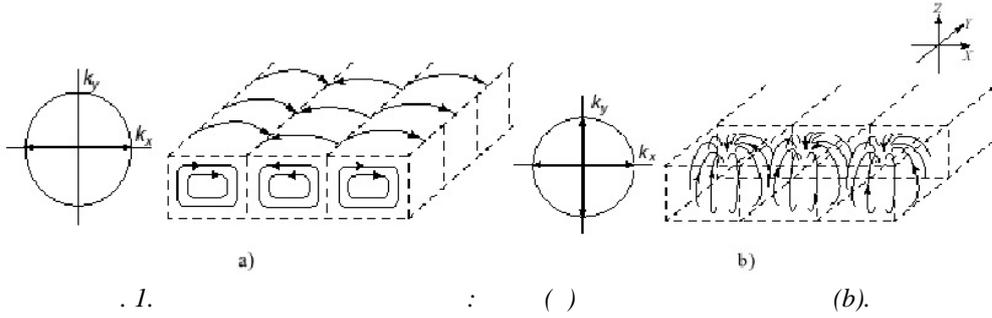
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Nature of structural transitions in the formation of the spatial structure of convective disturbances in the Proctor-Sivashinsky's model for thin liquid layer with poorly conducting boundaries is considered. Regime with peaking in the process of instability in the spatial spectrum is develops. It forms discrete features-narrow spectral lines. Correlation between the different concepts of structural defects is researched.

Key words: Proctor-Sivashinsky model, structural transition, defectiveness of structure

1.

[1,2],
 () , () , [3]. [4]



[5],

2.

$Ra = Ra_{thr}(1+v)$, Ra Ra_{thr} , (z) [1,2],

$(x,y):$
 $\dot{\Phi} = v^2 \Phi - (1 - \nabla^2)^2 \Phi + \frac{1}{3} \nabla (\nabla \Phi |\Phi|^2) + v^2 f$, (1)

f , v ,

$\Phi = \varepsilon \sum_j a_j \exp(i\vec{k}_j \vec{r})$ (2)

$|\vec{k}_j| = 1$, $\propto v^2$, a_j

[3]:
 $\dot{a}_j = a_j - \sum_{i=1}^N V_{ij} |a_i|^2 a_j + f$ (3)

$$V_{ij} = (2/3) \left(1 - 2(\vec{k}_i \vec{k}_j)^2 \right) = (2/3) (1 + 2 \cos^2 [\]), \tag{4}$$

$$[\] - \vec{k}_i \vec{k}_j, \quad V_{jj} = 1.$$

$$-Lx/2 <$$

$$x < Lx/2, \quad -Ly/2 < y < Ly/2$$

$$\Phi = \sum_{n=-N}^{n=N} a_{n,m} \sin(2fnx) \sin(2fmy),$$

$$n = N \cos[\], \quad m = N \sin[\] -$$

$$N^2 = n^2 + m^2.$$

3.

$$(3),$$

[4,6].

$$[.]$$

$$I = \sum_j a_j^2$$

$$(3),$$

0,75.

[4, 7].

- « »,

,

$f \neq 0$,

[7].

$$(I \rightarrow 1).$$

I

$$I \approx 1.07.$$

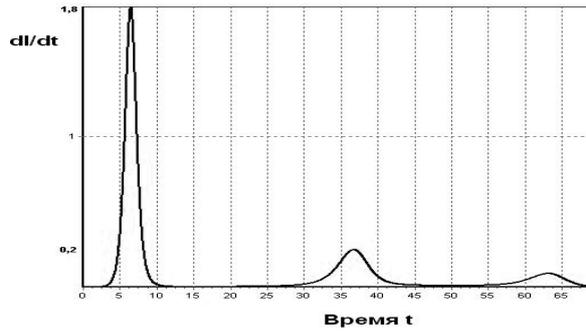
"

"

"

"

$$(.2).$$



.2.

$\partial I / \partial t$

$$I = \sum_j a_j^2$$

$$I = 1.2.$$

$$I = \sum_j a_j^2$$

$$I \approx 1$$

$\partial I / \partial t$

$$I \approx 1.07.$$

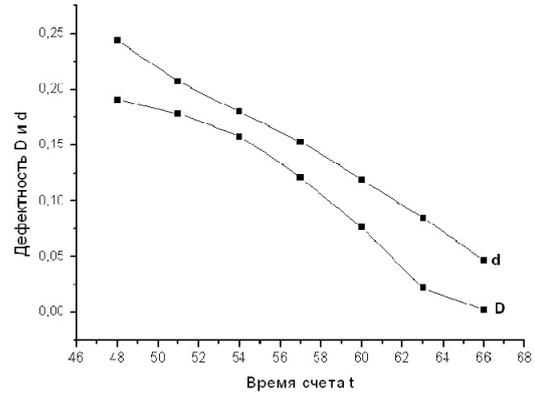
4.

« $a_1 \quad a_2$ » (. . .) (2)

$$D = \sum_{j=1,2} a_j^2 / \sum_j a_j^2, \tag{5}$$

« $d = N_{def} / N$, N_{def} -

(N -) .



3.

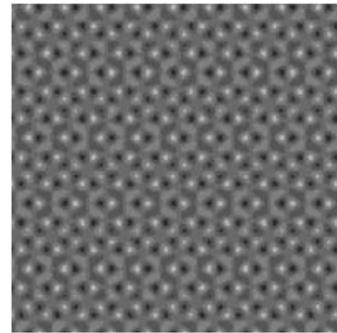
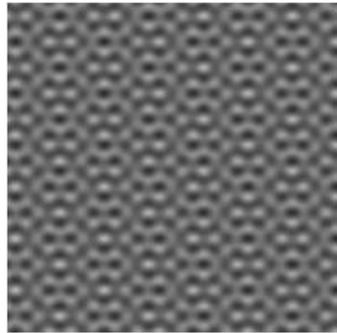
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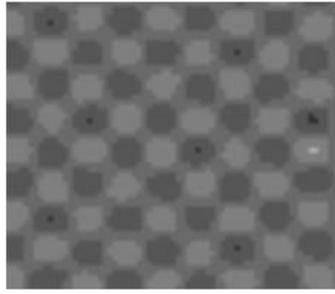
, (.3)

8 ,

(.3).

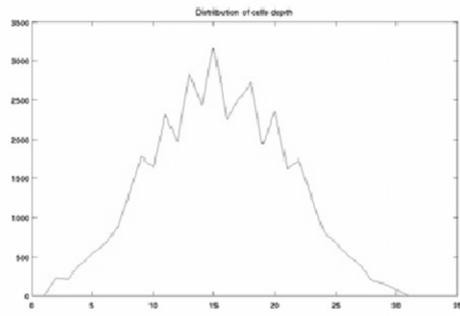
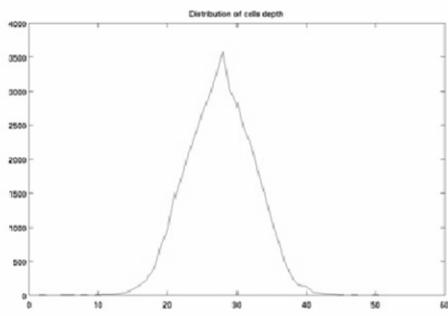
(.3).





3.

(. . .2)



4.

.4

5.

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