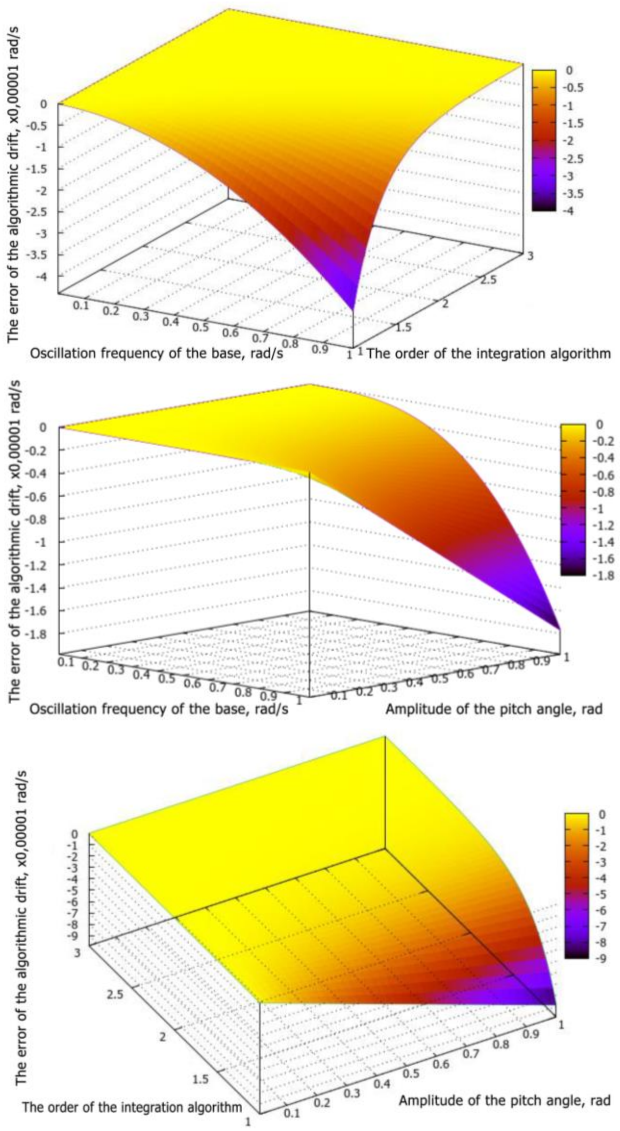

h) i) j)

Fig. 2. Graphs of the dependence of the algorithmic orientation drift error:

a – $\delta\dot{\alpha} = f(\varphi, h)$, ω=1 rad/s, N=2, $\alpha_m=\beta_m=\chi_m=0.1$ rad/s;
b – $\delta\dot{\alpha} = f(\varphi, \omega)$, h=0.05 s, N=2, $\alpha_m=\beta_m=\chi_m=0.1$ rad/s;
c – $\delta\dot{\alpha} = f(\varphi, \beta_m)$, h=0.05 c, ω=1 rad/s, N=2, $\alpha_m=\chi_m=0.1$ rad/s;
d – $\delta\dot{\alpha} = f(\varphi, N)$, h=0.05 s, ω=1 rad/s, $\alpha_m=\beta_m=\chi_m=0.1$ rad/s;
e – $\delta\dot{\alpha} = f(h, \omega)$, φ=45°, N=2, $\alpha_m=\beta_m=\chi_m=0.1$ rad/s;
f – $\delta\dot{\alpha} = f(h, N)$, φ=45°, ω=0.5 rad/s, $\alpha_m=\beta_m=\chi_m=0.1$ rad/s;
g – $\delta\dot{\alpha} = f(h, \beta_m)$, φ=45°, ω=0.5 rad/s, N=2, $\alpha_m=\chi_m=0.1$ rad/s;
h – $\delta\dot{\alpha} = f(\omega, N)$, φ=45°, h=0.05 s, $\alpha_m=\beta_m=\chi_m=0.1$ rad/s;
i – $\delta\dot{\alpha} = f(\omega, \beta_m)$, φ=45°, h=0.05 s, N=2, $\alpha_m=\chi_m=0.1$ rad/s;
j – $\delta\dot{\alpha} = f(N, \beta_m)$, φ=45°, ω=0.5 rad/s, h=0.05 s, $\alpha_m=0.1$ rad/s

- reducing the integration step (increasing the discretization frequency) reduces the error of algorithmic drift to almost zero; the influence of other parameters is practically insignificant, especially of integration algorithm order, greater than 2;

- the degree of influence of the oscillation frequency of the base on the unit is greater than the degree of influence of the integration step, and the error of algorithmic drift when ω≤0.5 rad/s practically goes to zero;

- the amplitudes of oscillation of angles course, pitch and roll influence on the size of error of the algorithmic drift of orientation linearly.

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