

# CHAOS 2009

## 2<sup>nd</sup> Chaotic Modeling and Simulation International Conference

June 1 - 5, 2009 Chania Crete Greece

[www.chaos2009.net](http://www.chaos2009.net)

### **Synergetics synthesis of amphibian control under heavy sea**

Anatoly A. Kolesnikov, Phuong Nguyen

Technological Institute of Southern Federal University, Synergetics and Control Processes

Department, Taganrog, Russia

[anatoly.kolesnikov@gmail.com](mailto:anatoly.kolesnikov@gmail.com)

One of aircraft automatic control applied problem is control system synthesis for aircraft take-off and landing (splash-down) under heavy sea. So there are the problem of structural adaptation of aircraft actuators and wing's mechanization system to corresponding flight mode. Engineering solutions providing basing and maintenance of aircraft at water surface actually define an image – its aerodynamics layout. So the key problem is to synthesize control laws providing minimization of environment resistant while balancing an aircraft at take-off and landing.

We present the method of synergetics synthesis or analytical design of interrelated control laws for aircraft motion. This laws account aircraft dynamical properties as nonlinear mechanical plant at heavy sea conditions.