4th International Sakharov Conference on Physics May 18-23, Moscow

Solar Cycle: New Asymptotic Solutions for Dynamo Equations

Sokoloff D. Popova H., Artyushkova M.,

(Moscow State University)



Butterfly diagrams of dynamo waves







Stretch-twist-fold



Zeldovich Krakow, 1972







Dynamo experiments





 $\left(\left(\gamma + iVk\right) + k^2\right)^2 = -iDk\alpha.$

 $V\frac{\partial A}{\partial z} = \alpha B + \frac{\partial^2 A}{\partial z^2},$ ∂A ∂t $-V\frac{\partial B}{\partial z} = D\frac{\partial A}{\partial z} + \frac{\partial^2 B}{\partial z^2}$ ∂B $\overline{\partial}$



Impulse of dynamo wave is a substantially complex quantity ТЕОРЕТИЧЕСКАЯ ФИЗИКА

Л.Д. ЛАНДАУ Е.М.ЛИФШИЦ

КВАНТОВАЯ МЕХАНИКА НЕРЕЛЯТИВИСТСКАЯ ТЕОРИЯ







Impulse diagram just before bifurcation





Leading eigenvalue gives a discontinuity



Two-layer dynamo: two pair of equations

Hamilton-Jacobi
equation becomes 6th
order equation.

