

Abstract Submitted  
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(so: called/BNL/DoE-hyped) “Self-Organized-Criticality”(SOC) is Merely Newton’s(1687) Law of Motion  $F = ma$  REdiscovery: LONG PRE-“Bak”!!! P.R.E. BAK, E. SIEGEL, EMET/F=C/C-S/La Jolla — “Bak”/BNL/DoE “self-organized-criticality”(SOC) usual BNL/DoE media-hype P.R spin-doctoring “show-biz” “Bush-waaa-...-aaah!!!” is manifestly-demonstrated in two distinct ways to be nothing but Newton’s Law of Motion  $F = ma$  REdiscovery!!! PHYSICS: (1687) cross-multiplied  $F = ma$  rewritten as  $1/m = a/F = \text{OUTPUT/INPUT} = \text{EFFECT/CAUSE} = \text{inverse-mass mechanical-susceptibility} = \chi(\omega)$ ;  $\chi(\omega) \sim (\text{fluctuation-dissipation theorem-equivalence /proportionality}) \sim P(\omega)$  “noise” power-spectrum;  $E \sim \omega$ ; and  $E \sim (\text{or any/all media with upper-limiting-speeds}) \sim m$ . Thus:  $\omega \sim E \sim m$ ; inversion yields:  $1/\omega \sim 1/E \sim 1/m \sim a/F = \chi(\omega) \sim P(\omega)$ ; hence:  $F = ma$  dual/inverse-integral-transform is “SOC”’s  $P(\omega) \sim 1/\omega$ !!! ; “PURE”-MATHEMATICS:  $F = ma$  double-integral time-series  $s(t) = [\text{vot} + (1/2) \text{at}^{(2)}]$  inverse/dual-integral-(Fourier, Laplace)-transform formally defines power-spectrum:  $P(\omega) = \Xi s(t) e^{[-(iORnoi)\omega t]} dt = \Xi [\text{vot} + (1/2) \text{at}^2] e^{[-(iORnoi)\omega t]} dt = \text{vo} \Xi t e^{[-(iORnoi)\omega t]} dt + (1/2) \Xi [a \neq a(t)] e^{[-(iORnoi)\omega t]} dt = \text{vo} (d/d\omega) \delta(\omega) + (1/2) [a \neq a(t)] (d/d\omega)^{(2)} \delta(\omega) = \text{vo}/\omega(0) + (1/2) [a \neq a(t)] / \omega^{\wedge}(1.000\dots)$ : if  $a = 0$ , then  $P(\omega) \sim 1/\omega(0)$ , versus if  $a \neq a(t) \neq 0$ , then  $P(\omega) \sim 1/\omega \sim 1/\omega^{(1.000\dots)}$ ; same exact conclusion as from physics: SOC  $\leq$ (reexpresses) $\Rightarrow F = ma$ !!!: SOC REdiscovery of  $F=ma$ : LONG PRE-“Bak”!!!

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