

Mathematical Physics

Derivation of Invariant Varieties of Periodic Points from Singularity Confinement in the case of Toda Map

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(Submitted on 10 Jul 2011 (v1), last revised 3 Mar 2012 (this version, v2))

In our previous work we have shown that the invariant varieties of periodic points (IVPP) of all periods of the 3 dimensional Lotka-Volterra map can be derived, iteratively, from the singularity confinement (SC). The method developed there can be applied to any integrable maps of dimension d only when the number of the invariants p equals to $d-1$. We propose, in this note, a new algorithm of the derivation which can be used in the cases $\frac{d}{2} \leq p \leq d-2$. Applying this algorithm to the 3 point Toda map, we derive a series of its IVPP's.

Comments: 7pages

Subjects: **Mathematical Physics (math-ph)**; High Energy Physics - Theory (hep-th)Cite as: **arXiv:1107.1832 [math-ph]**(or **arXiv:1107.1832v2 [math-ph]** for this version)

Submission history

From: Tsukasa Yumibayahi [[view email](#)]**[v1]** Sun, 10 Jul 2011 04:43:21 GMT (9kb)**[v2]** Sat, 3 Mar 2012 18:35:00 GMT (6kb)*[Which authors of this paper are endorsers?](#)*

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