Quantum Physics

On the new translational shape invariant potentials

Arturo Ramos

(Submitted on 19 Jun 2011 (v1), last revised 7 Jul 2011 (this version, v2))

Recently, several authors have found new translational shape invariant potentials not present in classic classifications like that of Infeld and Hull. For example, Quesne on the one hand and Bougie, Gangopadhyaya and Mallow on the other have provided examples of them, consisting on deformations of the classical ones. We analyze the basic properties of the new examples and observe a compatibility equation which has to be satisfied by them. We study particular cases of such equation and give more examples of new translational shape invariant potentials.

Comments:	9 pages, uses iopart10.clo, version 2
Subjects:	**Quantum Physics (quant-ph)**; Mathematical Physics (math-ph)
MSC classes:	81Q05, 81Q60
Journal reference:	J. Phys. A: Math. Theor. 44 (2011) 342001
DOI:	10.1088/1751-8113/44/34/342001
Cite as:	**arXiv:1106.3732 [quant-ph]**
	(or **arXiv:1106.3732v2 [quant-ph]** for this version)

Submission history

From: Arturo Ramos [view email]
[v1] Sun, 19 Jun 2011 11:07:24 GMT (10kb)
[v2] Thu, 7 Jul 2011 14:53:07 GMT (11kb)

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