

A New Loop Algebra and Its Corresponding Multi-component Integrable Hierarchy

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Abstract: A type of new loop algebra \tilde{G}_M is constructed by making use of the concept of cycled numbers. As its application, an isospectral problem is designed and a new multi-component integrable hierarchy with multi-potential functions is worked out, which can be reduced to the famous KN hierarchy.

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Key words: cycled numbers, loop algebra, multi-component integrable hierarchy

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