

## Quantum Currents in the Coset Space $SU(2)/U(1)$

DING Xiang-Mao,<sup>1</sup> HOU Bo-Yu<sup>2</sup> and ZHAO Liu<sup>2</sup>

<sup>1</sup> Institute of Applied Mathematics, Academy of Mathematics and System Sciences, Academia Sinica, P.O. Box 2734, Beijing 100080, China

<sup>2</sup> Institute of Modern Physics, Northwest University, Xi'an 710069, China  
(Received: 2001-6-8; Revised: )

Abstract: We propose a rational quantum deformed nonlocal currents in the homogeneous space  $SU(2)_k/U(1)$ , and in terms of it and a free boson field a representation for the Drinfeld currents of Yangian double at a general level  $k=c$  is obtained. In the classical limit  $\hbar \rightarrow 0$ , the quantum nonlocal currents become  $SU(2)_k$  parafermion, and the realization of Yangian double becomes the parafermion realization of  $SU(2)_k$  current algebra.

PACS: 11.25.Hf, 11.30.Rd, 03.65.Fd, 02.20.Hj

Key words: affine Lie algebra, massive field theory, coset model, nonlocal current, Yangian double with center

[\[Full text: PDF\]](#)

Close