

**Hida Replies:** Yang and Hyman [1] pointed out the possibility of the random singlet phase in the random phase spin-1 Heisenberg antiferromagnetic chain with bond distribution  $P(J) = \alpha J^{-1+\alpha}$  which has the power law singularity for small  $J$ . Obviously, my numerical calculation [2] is restricted to the box distribution which is nonsingular at  $J \rightarrow 0$ . Therefore such possibility cannot be excluded from my numerical calculation.

As far as we rely on the symmetry argument in [2], however, it is unlikely that the string order in the random Haldane phase is destabilized by uniform randomness, because any uniform randomness cannot recover the translational symmetry as conjectured in [2]. Consider the analogy with the simpler symmetry breaking field such as magnetic field and its conjugate physical quantity, magnetization. If the magnetization is induced by the applied magnetic field, any uniform randomness cannot destroy the magnetization.

Nevertheless, I agree with the authors of the Comment that this conjecture is based on the *assumption* that the string order is the direct consequence of the breakdown of the translational invariance. It is still an open problem whether this assumption is valid or not. Further numerical and/or analytical investigation would be necessary to check the validity of this assumption.

Kazuo Hida

Faculty of Science, Department of Physics  
Saitama University  
Urawa, Saitama, 338-8570 Japan

Received 30 November 1999

PACS numbers: 75.10.Jm, 64.60.Ak, 75.40.Mg, 75.50.-y

- [1] K. Yang and R. A. Hyman, preceding Comment, Phys. Rev. Lett. **84**, 2044 (2000).
- [2] K. Hida, Phys. Rev. Lett. **83**, 3297 (1999).