

SPONTANEOUS BREAKING OF CHIRAL
SYMMETRY IN FRUSTRATED SPIN
CHAINS IN MAGNETIC FIELD

A.K. Kolezhuk^{1,2}, T. Vekua^{3,4}, R.S. Khymyn^{5,2}

¹Institut für Theoretische Physik, Universität Hannover
(2, Appelstraße, Hannover 30167, Germany;
e-mail: kolezhuk@itp.uni-hannover.de),

²Institute of Magnetism, Nat. Acad. Sci.
and Ministry of Education of Ukraine

(36b, Academician Vernadsky Blvd.,
Kyiv 03142, Ukraine),

³Université Louis Pasteur,

Laboratoire de Physique Théorique
(3, Rue de l'Université, Strasbourg 67084, France),

⁴Andronikashvili Institute of Physics

(380077 Tbilisi, Georgia),

⁵Taras Shevchenko Kyiv National University,

Faculty of Radiophysics

(2, Bild. 5, Academician Glushkov Prosp.,
Kyiv 03127, Ukraine)

S u m m a r y

It is predicted that the quantum chiral phase should exist in frustrated spin- S chains in the presence of an external magnetic field. The qualitative form of the phase diagram in the large- S limit and for $S = \frac{1}{2}$ and 1 is discussed.