

**XXXVI International Workshop on High Energy Physics "Strong Interactions:
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Pion degrees of freedom in nuclear matter, from 1971 till tomorrow

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After a historical introduction I will review progress in description of the pion degrees of freedom in equilibrium and nonequilibrium nuclear matter. Effects of the softening of the pion mode and pion condensation will be considered. Applications to such nuclear systems as atomic nuclei, neutron stars, heavy-ion collisions, and hypothetical nuclear systems will be discussed.

References

- D.N. Voskresensky, "Pion Softening and Pion Condensation,"
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- D.N. Voskresensky, "Many particle effects in nucleus nucleus collisions,"
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- D.N. Voskresensky, "S-wave pion condensation in symmetric nuclear matter,"
Phys. Rev. D 105 (2022) no.11, 116007
- D.N. Voskresensky, "Pion-sigma meson vortices in rotating systems,"
Phys. Rev. D 109 (2024) no.3, 034030
- D.N. Voskresensky, " Pion degrees of freedom in nuclear matter, from 1971 till tomorrow".

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