Nuclear physics questions

1. The structure of the nucleus.
2. Binding energy of nuclei.
3. Weizsäcker formula.
4. Nuclear sizes.
5. Parity of nuclei.
6. Law of conservation of parity.
7. Electric quadrupole moment of the nucleus.
8. Isotopic spin.
9. Law of conservation of isotopic spin
10. Nuclear potential.
11. Types of nuclear potentials
12. Exchangeable nuclear forces.
13. Bartlet's forces.
14. Forces of Marjoram.
15. Heisenberg forces.
16. Drop model of the nucleus.
17. Vibrational levels of spherical nuclei
18. Shell model of the nuclei.
19. Accounting for spin-orbit interaction
20. Filling the levels with nucleons
21. Generalized nuclear model
22. Rotational levels of the nucleus
23. Radioactivity of nuclei.
24. Law of radioactive decay.
25. Radioactive families
26. α-decay of nuclei.
27. Mechanism of α-decay
28.Tunnel effect
29. β-decay of nuclei.
30. β-spectrum and the neutrino hypothesis.
31. Transitions during beta transformations
32. Violation of the parity conservation law in the β-decay of nuclei.
33. CPT invariance.
34. Neutrino helicity
35. γ-radiation of nuclei.
36. E(l)-transitions
37. M(l)-transitions
38. Internal Conversion
39. Nuclear isomerism
40. Mössbauer effect
41. Nuclear reactions.
42. Conservation laws for nuclear reactions.
43. Compound nucleus.
44. Breyt-Wigner formulas.
45. Nuclear fission.
46. Nuclear chain reaction.
47. Atomic bomb
48. Nuclear reactors.
49. Thermonuclear reactions
50. Hydrogen bomb

51. Fundamental interactions.
52. Electromagnetic interaction
53. Weak interaction
54. Strong interaction
55. Gravity
56. Classification of elementary particles.
57. Physical quantities characterizing elementary particles.
58. Elementary particles, conservation laws
59. Quarks.
60. Quark structure of hadrons.

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