



Math for the people, by the people.

topic: groupoid symmetry and duality

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Related topic	QuantumGroups
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Related topic	WeakHopfCAlgebra2

## 0.1 Symmetry groups, groupoids, algebras and duality

This is a new topic by multiple contributors of substantial interest to both mathematicians and mathematical physicists or theoreticians. Any significant content additions are welcome. The following list is open to additions and expansion

1. Symmetry and groups
2. Galois groups and Galois theory
3. Symmetry and groupoids: internal and external symmetry
4. Galois groupoids
5. Fundamental groupoid functor
6. Extensions of Galois theory
7. Tanaka-Krein duality
8. Grothendieck extension of Tanaka-Krein duality to non-Abelian groups
9. Fourier duality
10. Quantum groups
11. Bravais lattices and their symmetry groups
12. Group representations
13. Matrices and symmetry
14. Classification of groups and algebras
15. ‘Broken symmetries’ in mathematical physics
16. Classical symmetries
17. Quantum symmetry and quantum groups
18. Extended symmetry and quantum groupoids
19. Differential equations and symmetry
20. Symmetry and duality
21. Groups and their dual algebras
22. Symmetry, logic and categorical logics
23. Symmetry resources: books, web links, conference announcement links, images, and so on

- 24. The algebraic dual of the non-Abelian isospin group  $SU(2)$
- 25. SM theory groups,  $U(1), SU(2), SU(3), \dots$
- 26. Spinors and symmetry
- 27. Symmetry in quantum gravity and general relativity