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SU(2) Representations of The Groups of Integer Tangles

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 [Keywords](#)  
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**Abstract:** In this work we classify the irreducible SU(2) representations of  $\Pi_1(S^3 \setminus k_n)$  where  $k_n$  is an integer  $n$  tangle and as a result we have proved the following theorem: Let  $n$  be an odd integer then  $\mathcal{R}^{\text{ast}}(\Pi_1(S^3 \setminus k_n)) / SO(3)$  is the disjoint union of  $n$  open arcs where  $\mathcal{R}^{\text{ast}}(\Pi_1(S^3 \setminus k_n))$  is the space of irreducible representations.

**Key Words:** Representation space, knot group, quaternions



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