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Asymmetry in RNA Pseudoknots[1]

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Single-stranded RNA can fold into a topological structure called a pseudoknot, composed of non-nested double-stranded stems and single-stranded loops. Our examination of the `PseudoBase` database of pseudoknotted RNA structures reveals asymmetries in the stem and loop lengths and provocative composition differences between the loops. By taking into account the difference between the major and minor grooves of the RNA double helix, we explain much of the asymmetry with a simple polymer physics model.

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[2]Work done while at Williams College