

# A Differential Geometric Introduction to Schubert Calculus

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## Abstact

We start with a conceptual introduction to the notion of a differential manifold, concentrating on its associated de Rham complex, and de Rham cohomology. Our motivating examples, the complex Grassmannians, are then presented, and it is shown how their de Rham complex decomposes into a double complex whose cohomology refines the de Rham cohomology. Finally, we describe the combinatorics of the cohomology ring, a rich area of study known as Schubert calculus.