

Complexes of differential operators

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It is often the case that natural linear differential operators fit together into a complex. The ubiquitous example is the exterior derivative and de Rham complex. This one is defined on any smooth manifold. With more structure, there are more examples. The Rumin complex is defined on any contact manifold. On a CR manifold, the Rumin complex acquires more structure. The Rumin-Seshadri complex is defined on any symplectic manifold. I shall describe a menagerie of complexes, some general theory, and some applications. Some evidence emerges for Chern's belief that "projective differential geometry will be of increasing importance".