RADON TRANSFORM AND THE CAVALIERI CONDITION: A COHOMOLOGICAL APPROACH

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CONTENTS

0. Introduction. Let P be a real n-dimensional projective space. For $k \in \mathbb{Z}$ and $\varepsilon \in \mathbb{Z}/2\mathbb{Z}$, we denote by $\mathscr{C}_P^\infty(\varepsilon|k)$ the $\mathscr{C}^\infty$ line bundle on P whose sections f satisfy the relation

$$f(\lambda x) = (\operatorname{sgn}\lambda)^\varepsilon \lambda^k f(x) \qquad \forall \lambda \in \mathbb{R}^\times,$$