

1135-58-1601 **Xavier Ramos Olive*** (olive@math.ucr.edu). *Neumann Li-Yau gradient estimate under integral Ricci curvature bounds.*

We prove a Li-Yau type gradient estimate for positive Neumann heat kernels, in a compact manifold \mathbf{M} with boundary $\partial\mathbf{M}$, with integral Ricci curvature bounds. We do not assume $\partial\mathbf{M}$ to be convex, but \mathbf{M} must satisfy the interior rolling R -ball condition. (Received September 23, 2017)