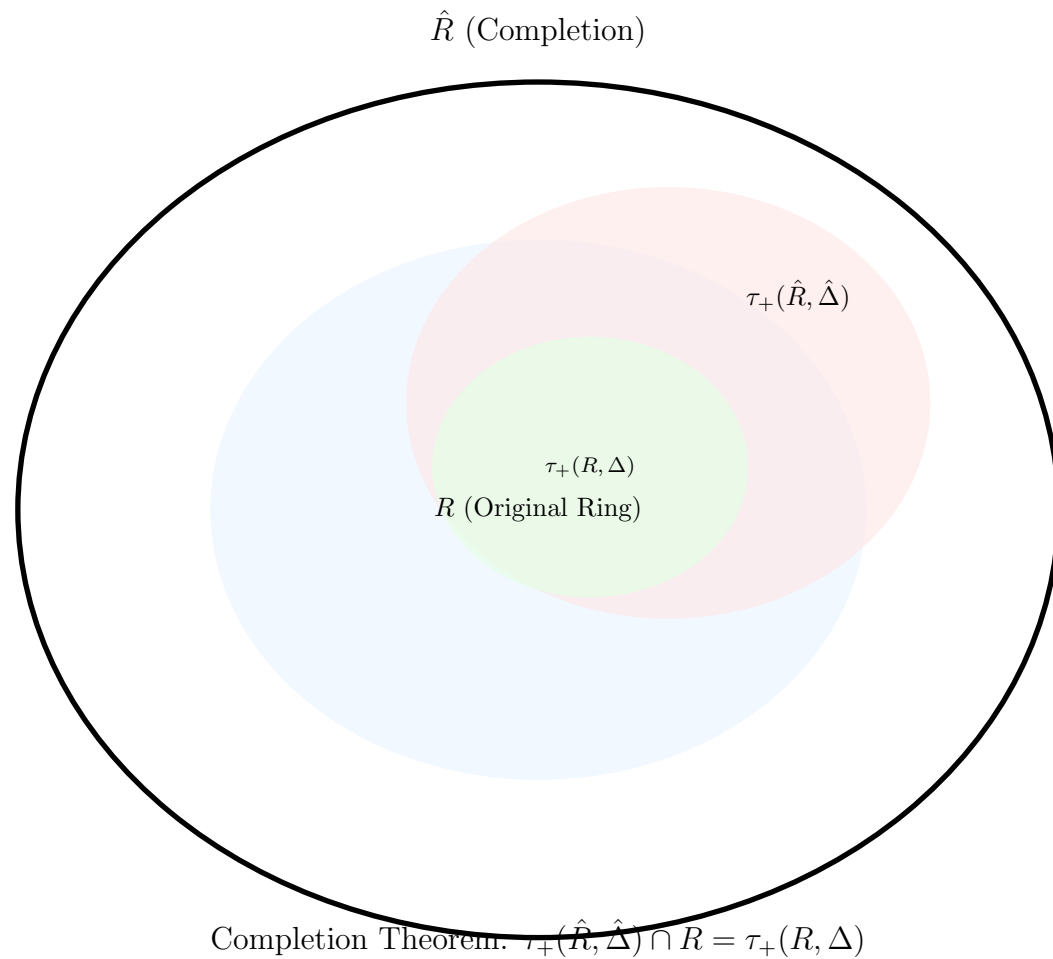


Set-Theoretic Representation of Completion Theorem



Predicate Invariance Under Completion

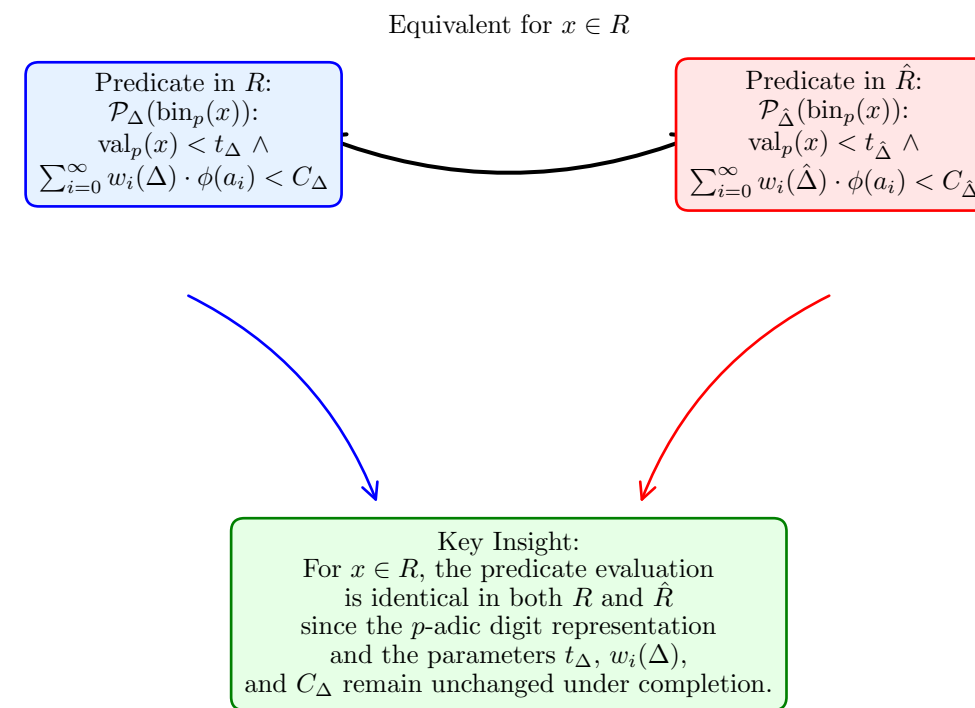


Figure: Visualization of the completion theorem for test ideals. The left panel shows the set-theoretic relationship between the original ring, its completion, and the corresponding test ideals. The right panel illustrates why the predicate-based characterization remains invariant for elements of the original ring R .