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On the other hand, several important results are valid for compact manifolds in \mathcal{C}^* . For example:

(i) If X is a manifold in \mathcal{C}^* and $H^0(X, \Omega_X^2) = 0$ then X is Moisëzon [14].

(ii) If X is a manifold in \mathcal{C}^* , $n = \dim X$ and $\pi: X \rightarrow S$ a surjective morphism of X on a complex space S , then $R^q \pi_* (\Omega_X^n) = 0$ for all $q > \dim X - \dim S$ (Takegoshi [22]). It seems difficult to prove such results with the hypothesis $X \in \mathcal{C}$. But we have

3.2. Theorem 5. $\mathcal{C} = \mathcal{C}^*$.

Proof. Let X be a compact complex space in \mathcal{C} . By definition there is a compact Kähler space X_1 and a surjective morphism $\varrho: X_1 \rightarrow X$. By Hironaka's flattening theorem [16], there is a commutative diagram

$$\begin{array}{ccc} X_1 & \xleftarrow{\sigma_1} & Y_1 \\ \varrho \downarrow & & \downarrow \pi \\ X & \xleftarrow{\sigma} & Y, \end{array}$$

where σ, σ_1 are projective modifications and π is flat. Since σ_1 is a Kähler morphism and X_1 a compact Kähler space, Y_1 is Kähler. Moreover Y can be chosen to be normal, since flatness is preserved by base-change. If we apply Corollary 1.2 to $\pi: Y_1 \rightarrow Y$, then we deduce that Y is Kähler and $X \in \mathcal{C}^*$ as required.

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