Unconformities in Jurassic-Paleogene sequences of Pacific continental framing as reflection of tectonic events

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The Jurassic-Paleogene sequences on the NE Asian continental margin characterized by terrigenous-volcanic composition are usually supposed to begong to a subduction-related belts. The presence of several structural unconformities suggests influence of different tectonic regimes.

Three significant uncomformities: Middle Cretaceous, Campanian and Middle Eocene, divide the Jurassic-Paleogene sequences into four units. The first of them, Jurassic-Hauterivian unit is represented by oceanic and island-arc formations which were tectonically jaxtoposed and accereted to the Asian continent during Middle Cretaceous orogeny. The orogeny caused the continental margin uplifting, sea regression and intensive erosion resulted in structural unconmformity development. The Barremian-Middle Albian molasse accumulated under these conditions. The second Albian-Campanian superimposed unit includes the continental marginal volcanic belt and the marine forearc basin deposits. The accumulation ended during the Campanian regression and orogeny. The third Maastrichtian-Middle Eocene unit consists of coal-bearing terrigenous sequences and alkaline basalts similar to intraplate type. The rocks filled up grabens which crossed the continental margin. The four unit forms the Eocene-Oligocene subduction-related volcanic belt superimposed upon older formations of the Pacific continental framing.

The available data suggest the heterogeneity of the Mesozoic-Cenozoic sequences that reflects the change of the tectonic environments in time on the Asian continental margin.