THE REGIONAL CONTROL OF GEOTECTONIC TO COALBED GAS IN CHINA

Zimin Zhang, Ruilin Zhang & Jianhang Gao. Jiaozuo Institute of Technology. Henan Province. People's Republic of China.

Applying the principle of plate tectonics and that of geologic evolution in China to Coal-geology and Gas-geology, the feature of coalbed gas formation, occurrence and its distribution in China have been studied systematically. Point out that the geotectonic background controls the formation and preservation of gas, and that compressive tectonics belts controls the outbursts of coal and gas. The areas of high gas content and emission in China can be distinguished according to this research. The regional distribution of dangerous areas of coal-gas outburst will be discussed in this paper. All the above mentioned will be described much more in detail as followed. Firstly, the main period of coal accumulation is Carboniferous-Permian in China. The coal seams formed in this period mainly distributed in North and South China that located at Pacific tract where the activity of modern plate is intensive. The coal rank has been achieved to middle-low bituminous coal and anthracite due to geothermal, telemagmatic and dynamic metamorphism. Therefore, significant amounts of coalbed gas were formed during coalification. The coal resource is up to 2200 billion tons, accounting for 35-48% of all the coal resources in China, the coalbed gas is up to $1,7037426x10^{12}$ m^3, accounting for 52,13% of the total. There are 537 couples of Carboniferous-Permian coal mines occupying 65,1% of all the high gas content coal mines, and 207 couples of outburst coal mines accounting for 75,55% of the total. Secondly, the Jurassic-Tertiary coalbed, having been formed during modern plate's developing, is dominated by low rank bituminous coal and lignite, with coal resources exceed 3820 billion tons, accounting for 61,16% of the total in China, and with 184 couples of high gas content coal mines, compressing 22,3% of the total. Thirdly, some geologic actions that control the conditions for preservation of gas have been emphasized, such as regional geological evolution, uplift and depression, weathering and erosion, compression and extension. The coalbed in North China plate during Carboniferous-Permian period was strongly affected by uplift and eroded late. The coalbed in South China plate during Carboniferous-Permian period was covered by thick sediments due to the continuous depression. Therefore, the conditions for preservation of coalbed gas in South China is superior to that in North China. In the Carboniferous-Permian coalbed, there are 537 couples of high gas content coal mines, including 131 couples of mines in North China and 406 couples in South China, and among 207 couples of outburst mines, there are 53 couples of mines in North China and 154 couples in South China. Lastly, it will be emphasized that districts of coal-gas outburst are controlled by the structural coal formed by the actions of strong tectonic compression.