Deep crustal stress state in Japan from the hydraulic fracturing data

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The magnitude of a deep-underground stress affects the stability of underground openings for the high level nuclear waste disposal. I compiled the underground stress data at 13 sites in Japan by the hydraulic fracturing method. The results support two important conclusions about the deep-underground stress state in Japan. First, the minimun and maximun horizontal stresses are greater than overburden pressure. Second, horizontal stresses increase with depth at the shallow depth (-250m), keep constant magnitude at the intermediate depth (250m-700m), and increase stepwise at the deeper depth (700m-).