



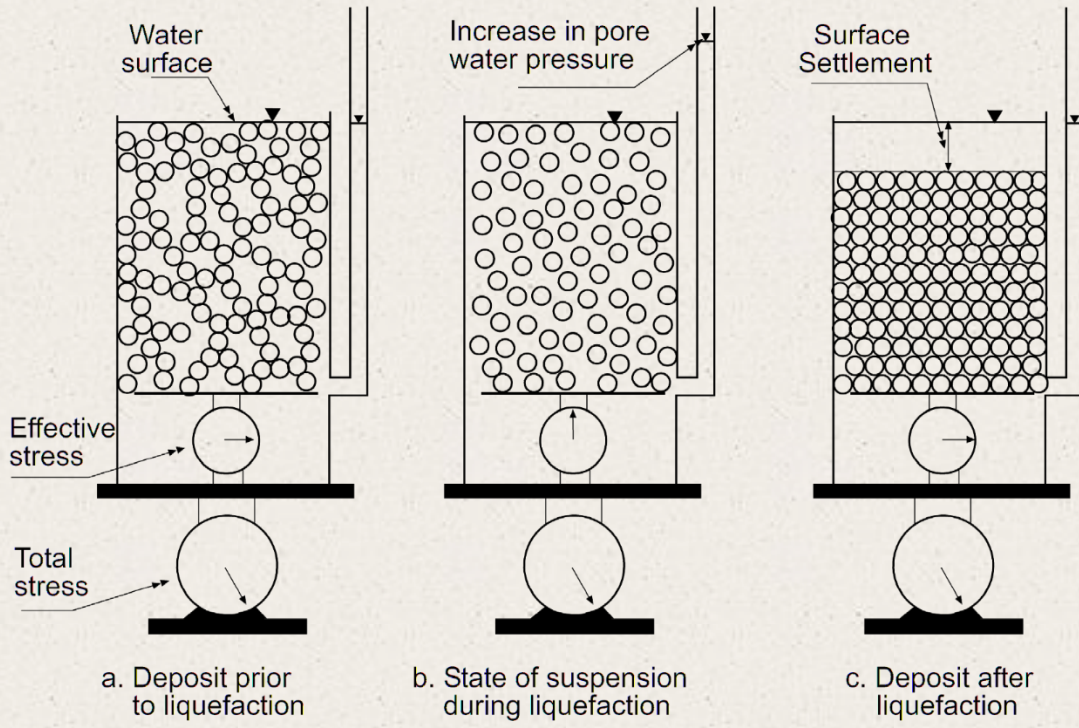
# JEM446

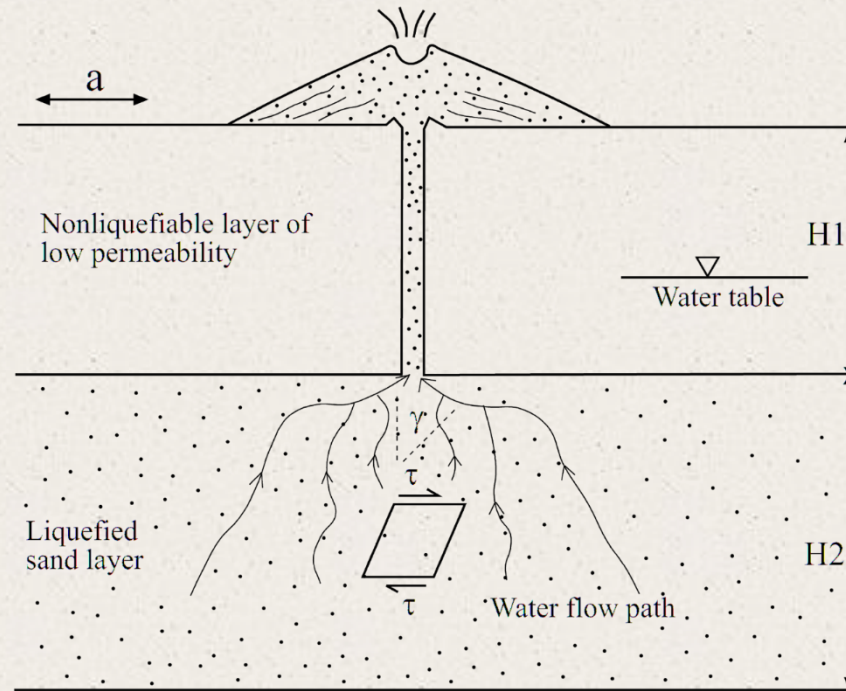
## ŞEHİR PLANLAMASINDA JEOLojİ

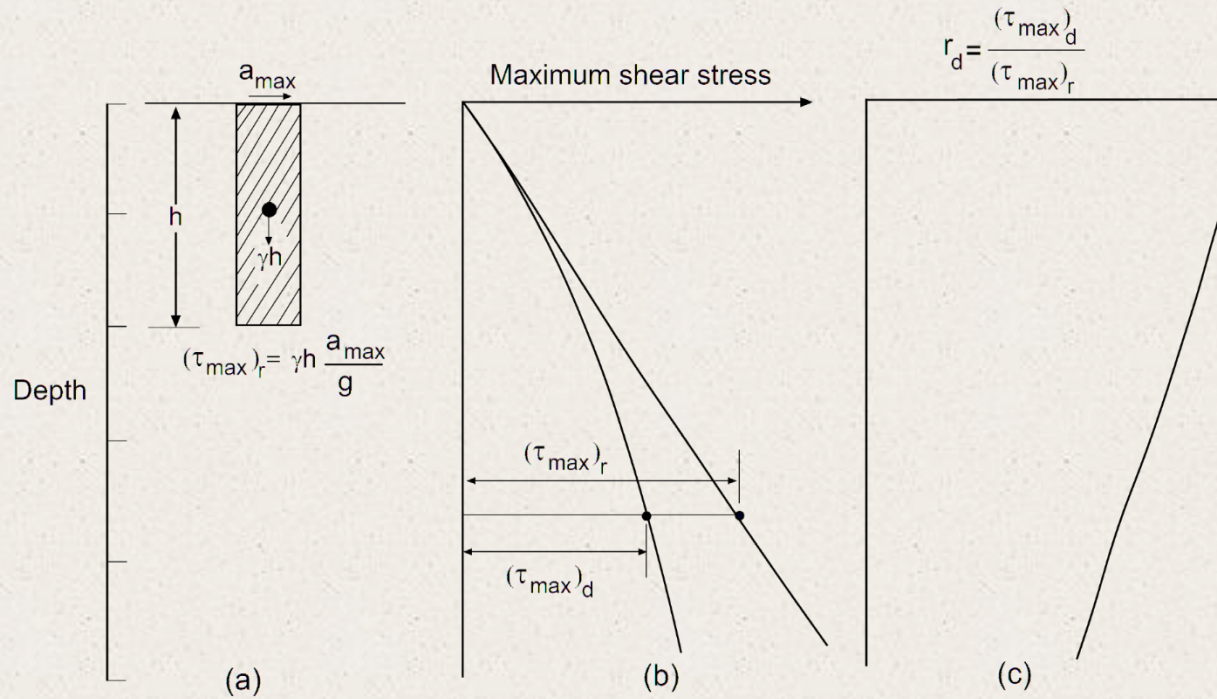
Ders Notları 9.Hafta  
Zemin Sıvılaşması

Dr. Koray ULAMIŞ

Ankara

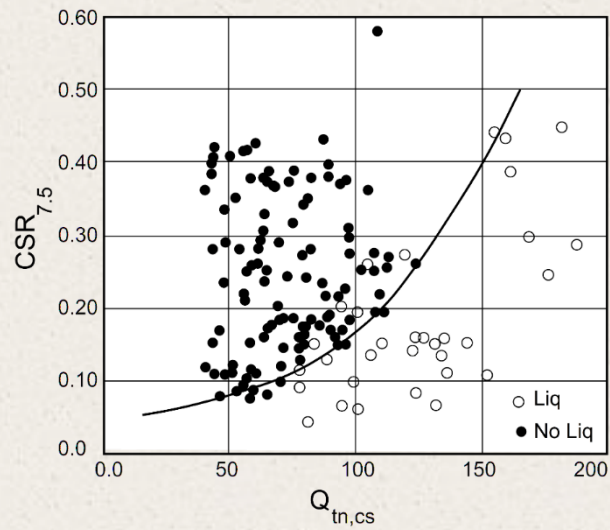
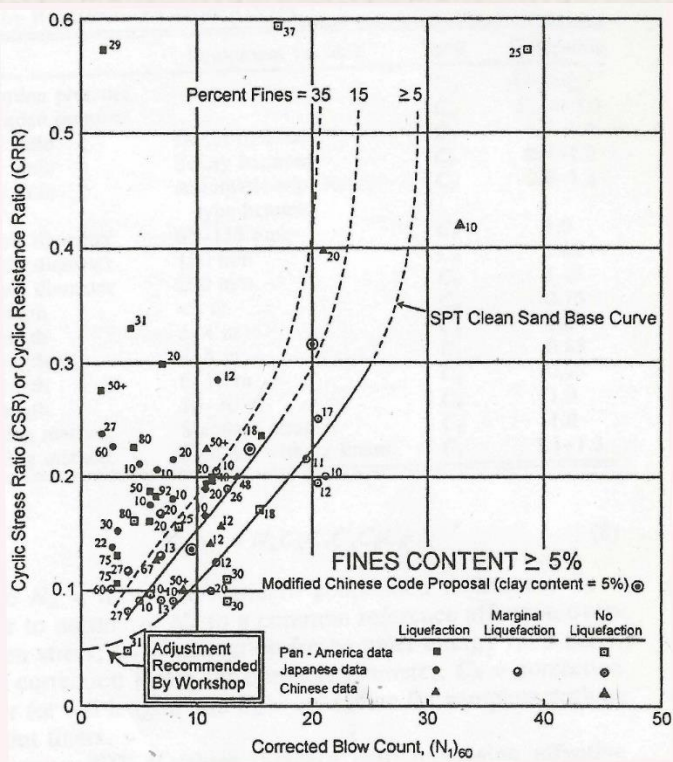




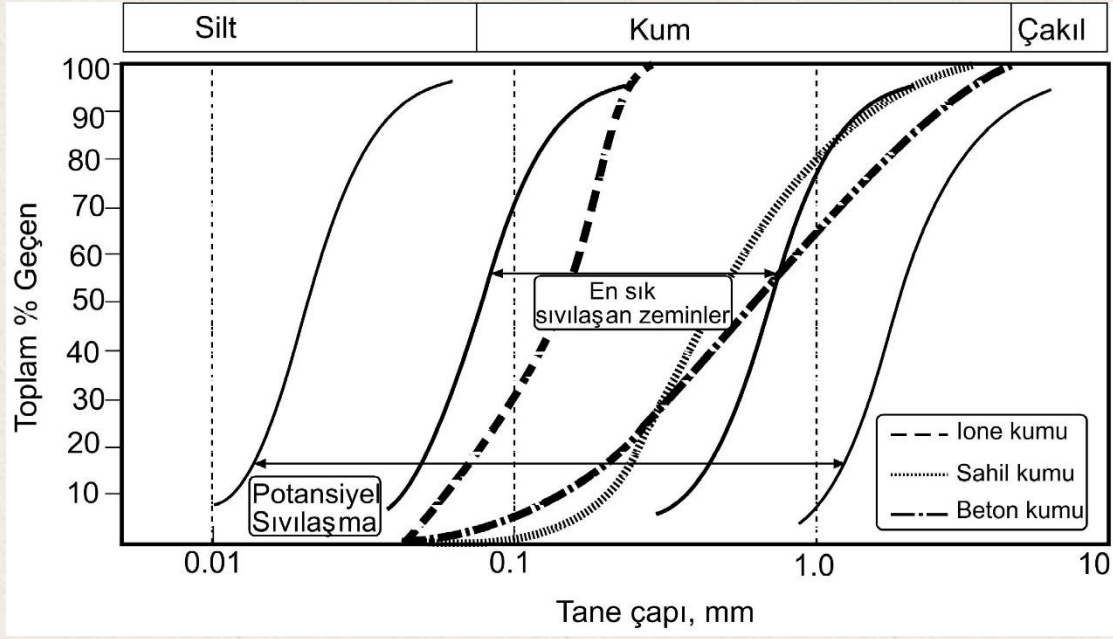


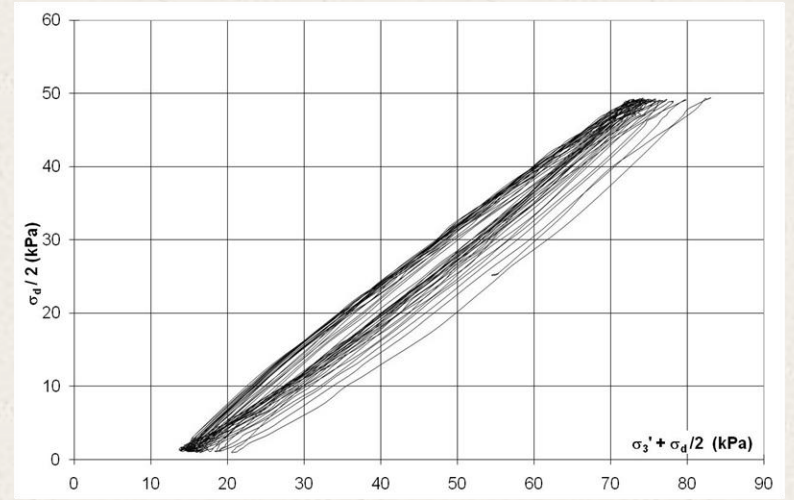
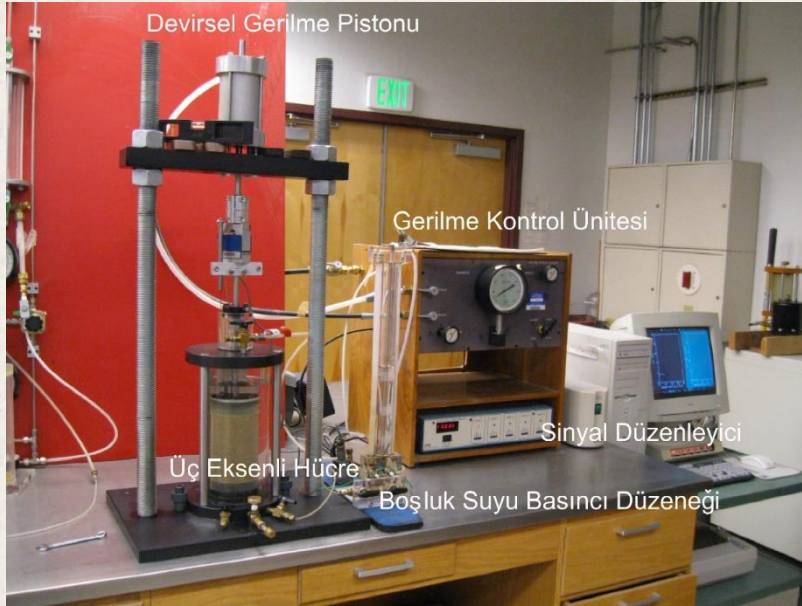
Determination of maximum shear stress

$$\text{CSR} = \frac{\tau_h}{\sigma'_v} = 0.65 \times \frac{a_{\max}}{g} \times \frac{\sigma_0}{\sigma'_v} \times r_d \quad (5)$$











*2011 Van depremi (Emre, et al. 2011)*





*2011 Y.Zelanda Christchurch depremi (Cubrinovski, et al. 2012)*





*1971 St. Fernando depremi sonrası Lower San Fernando barajında dolgunun hareket etmesi*

*(Steinbrugge Collection, EERC, University of California at Berkeley)*



*Sapanca otelinde yanal yayılma sonrası göle doğru hareket*

*( Aykut Barka, ITU )*



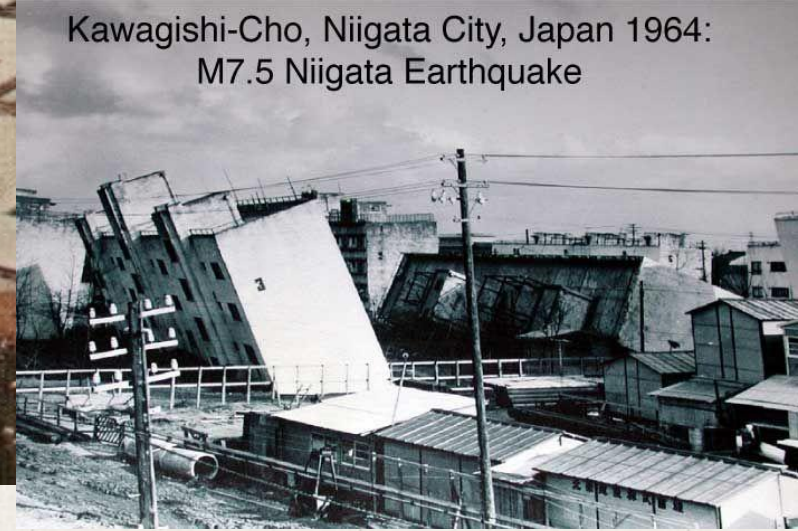


*1964 Alaska depreminde Turnagain Heights yanal yayılma ve sığ yamaç hareketleri*





Kawagishi-Cho, Niigata City, Japan 1964:  
M7.5 Niigata Earthquake



*1964 Niigata-Japonya depremi sonrası Kawagishicho  
binalarının tilt hareketi(Kawasumi, 1968)*



*17 Ağustos Marmara depremi sonrası Adapazari'nda yan yatan yapılar(Erdik, 2000).*