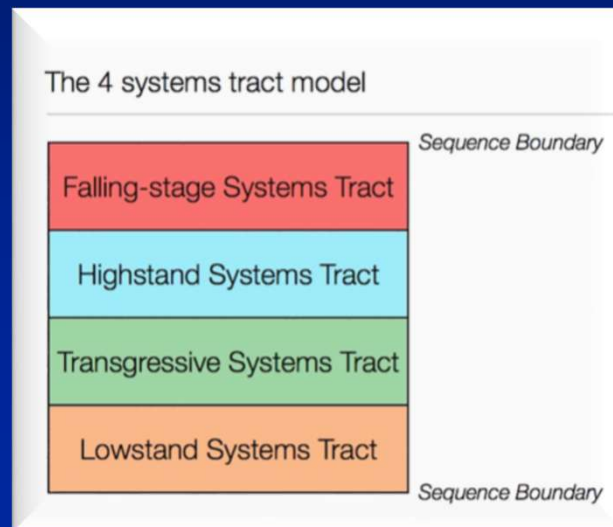


6. İSTİF STRATİGRAFİSİ



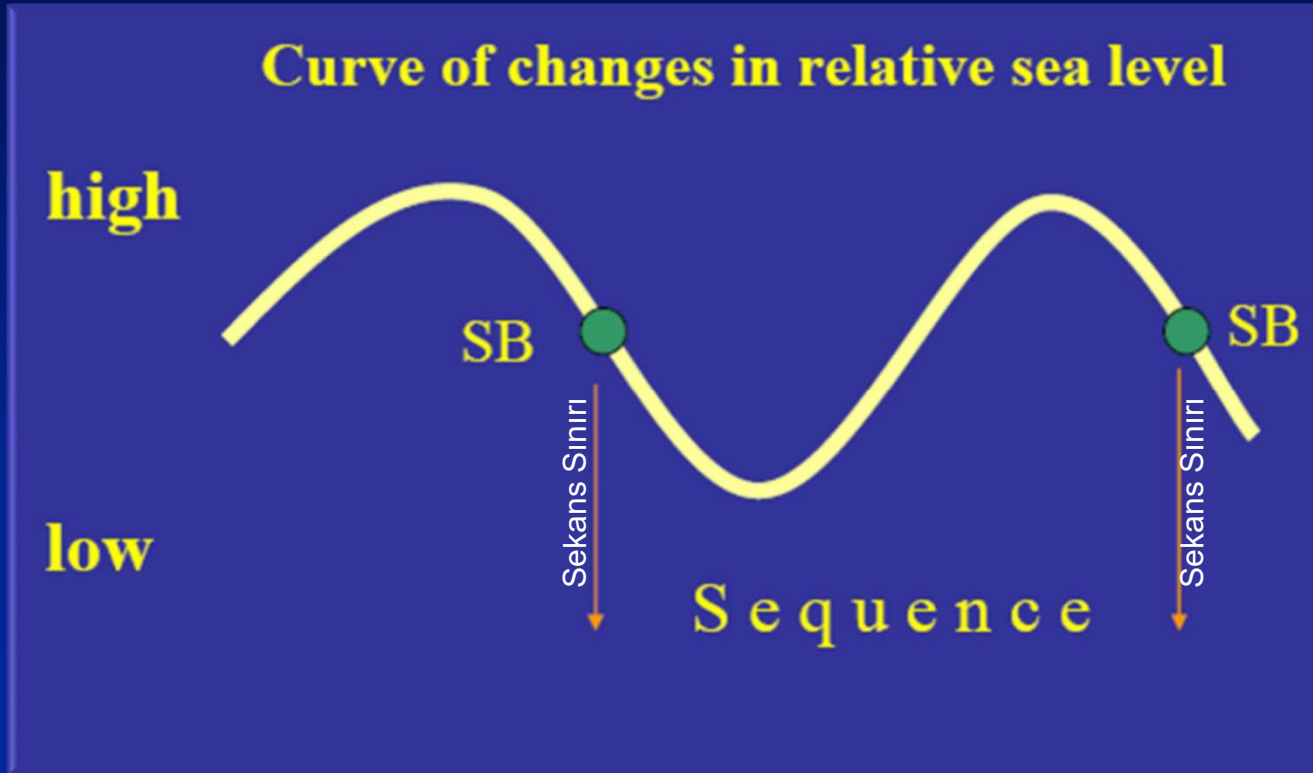
Sedimanter İstif

Tavandan ve tabandan uyumsuzluklar
ya da
onların eşdeğeri yüzeylerle sınırlanmış,
kökensel ilişkili katmanlardan oluşan
ve
nispeten birbirleriyle uyumlu
bir stratigrafik birimdir

İSTİF

İstif, iki düşen deniz düzeyi arasındaki zamanda çökelmiştir

SB yüzeylenmiş erozyon yüzeyidir
(ör, kıta yamacı ve havza tabanı)

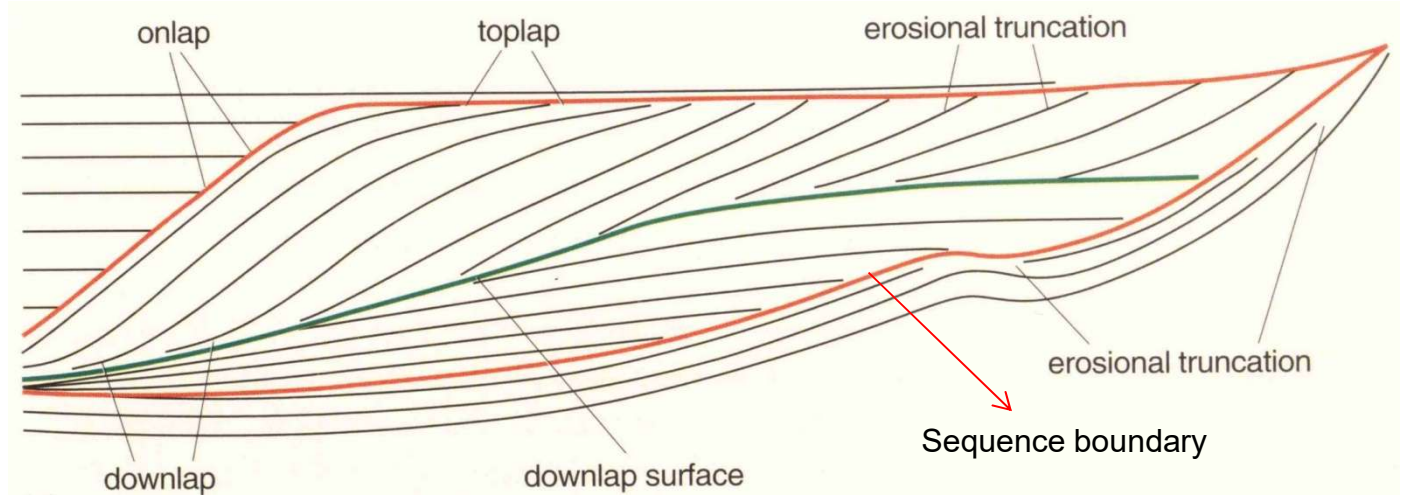


İstif Stratigrafisinin resmi başlangıcı (Vail vd 1977)

Eski Görüş; Sismik yansımalar litofasiyes sınırlarını izler ve zaman çizgilerini keser
Yeni Görüş; Sismik yansımalar eşzamanlıdır ve litofasiyes sınırlarını keser



Vail, P. R



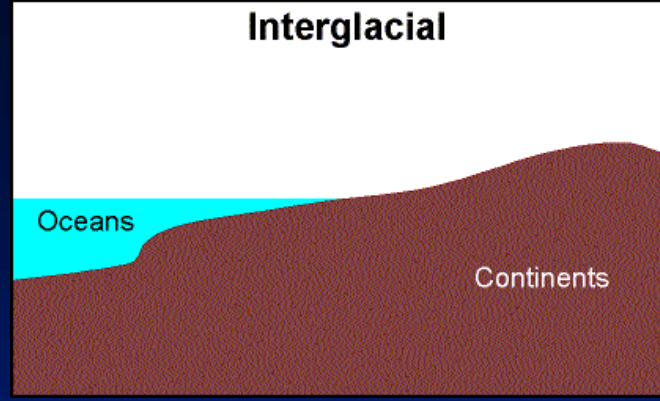
Kabaca, bir **transgrasyon-regresyon** dizilimi olarak tanımlanan bir havza
Sekans Stratigrafi yöntemleriyle değerlendirilmekte ve yorumlanmaktadır.

İstif Stratigrafisi

Ana tema,
litofasiyesleri ve birbirleriyle olan ilişkilerini
incelemek
kronostratigrafik bir kurgu yapmak

Çökellerde döngüsellik **denizel** havzalara özgüdür

Tektonik, çökel sağlama ve östasi
etkileşimi sonucu
görelî deniz seviyesi değişimi ile kontrol edilir



Buzul-östatik kökenli döngüler
on veya yüzbinlerce yıl aralıklarla

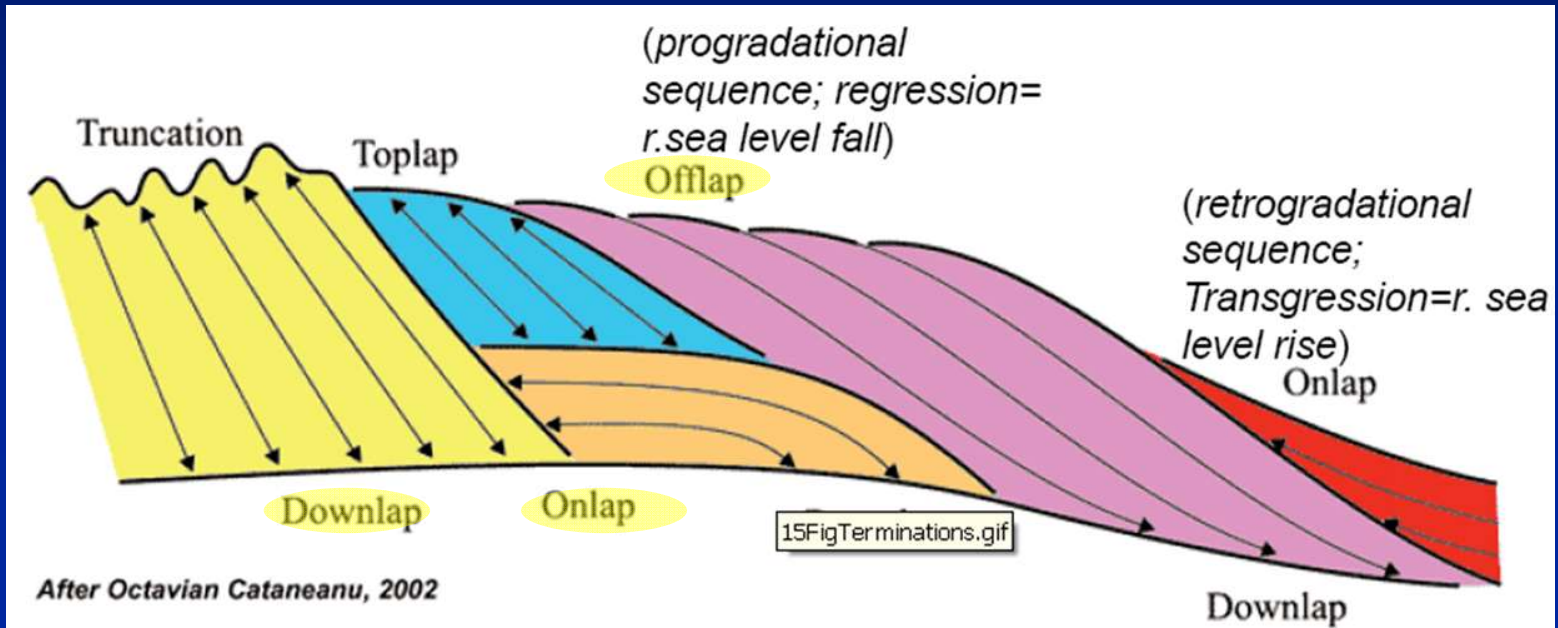
Yavaş sıklıklı döngüler ise
milyonlarca yıl ve
yüzlerce milyon yıl aralığında gelişir

İstif alt ve üst sınırlarında, istif belirleyici elemanlar mevcuttur

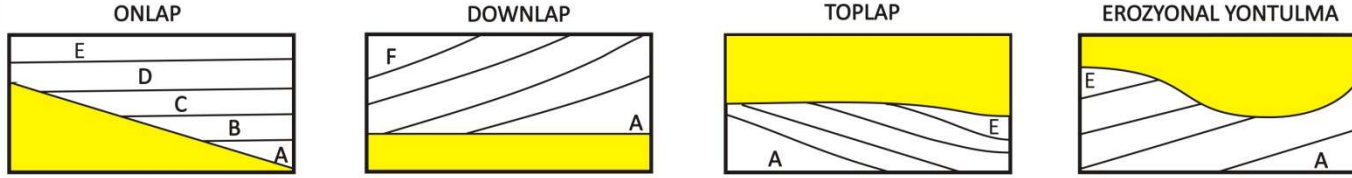
Eğimli bir yüzeye karşı ve yanal olarak biten refleksiyonlar **Onlap**.
Onlap'ler deniz seviyesinin yükseldiğini, yani transgresyonu ifade ederler

Aşağı doğru bir eğimle havzaya doğru eğimli refleksiyonlar **Downlap**.
Downlap'ler deniz seviyesinin düştüğünü, yani regresyonu ifade ederler

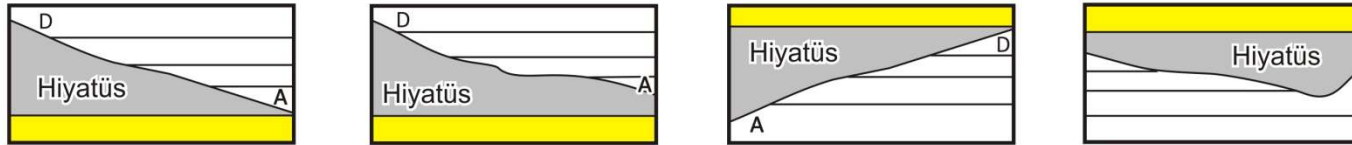
Üzerlerinde çökmezlik bulunan yüzeye karşı biten yansımalar **Toplap**



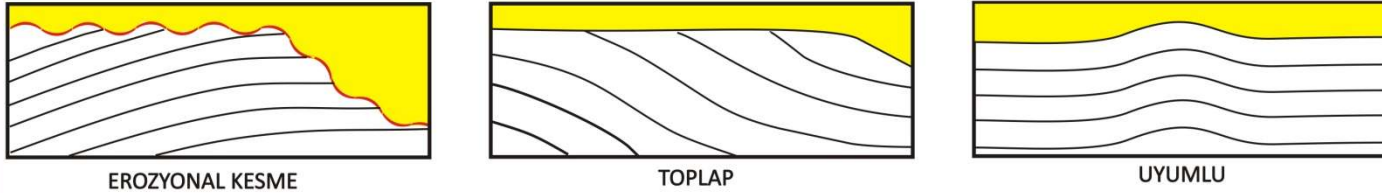
STRATİGRAFİK İLİŞKİ



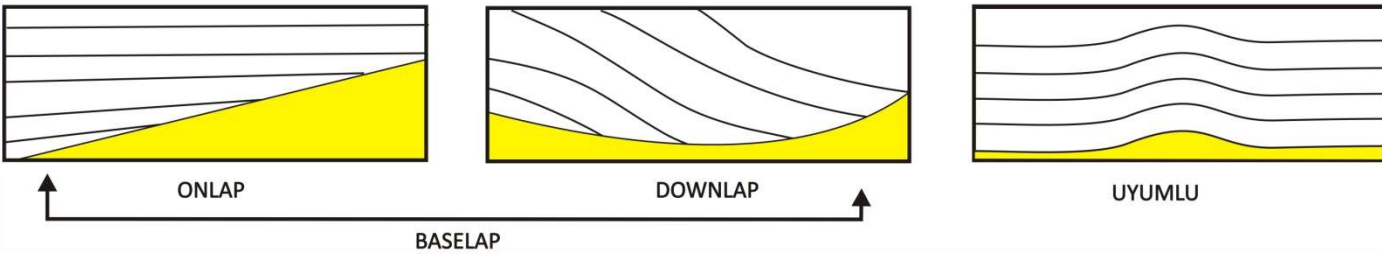
KRONOSTRATİGRAFİK İLİŞKİ



ÜST SINIRLAR

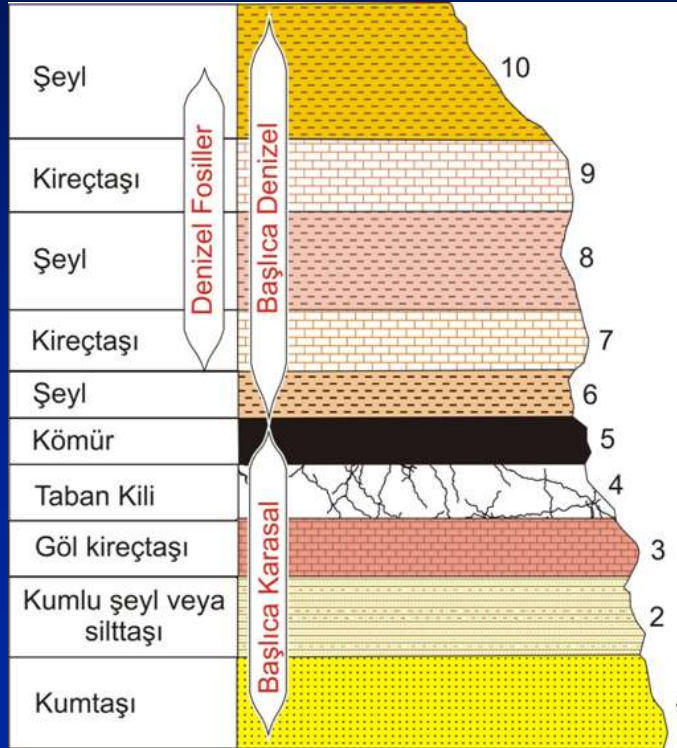


ALT SINIRLAR



Katmanlar ve İstif Kenarları İlişkileri (Cherly 1988)

Kuvaterner çökellerinin çalışmaları,
“**siklotem**” olarak adlandırılan,
tekrarlayan fasiyesler
şeklinde gruplandırılmıştır



Siklotem ideal olarak 10 birimden oluşur.

Birçok siklotem de bazı birimler aşınma veya çökmemelik nedeniyle eksiktir

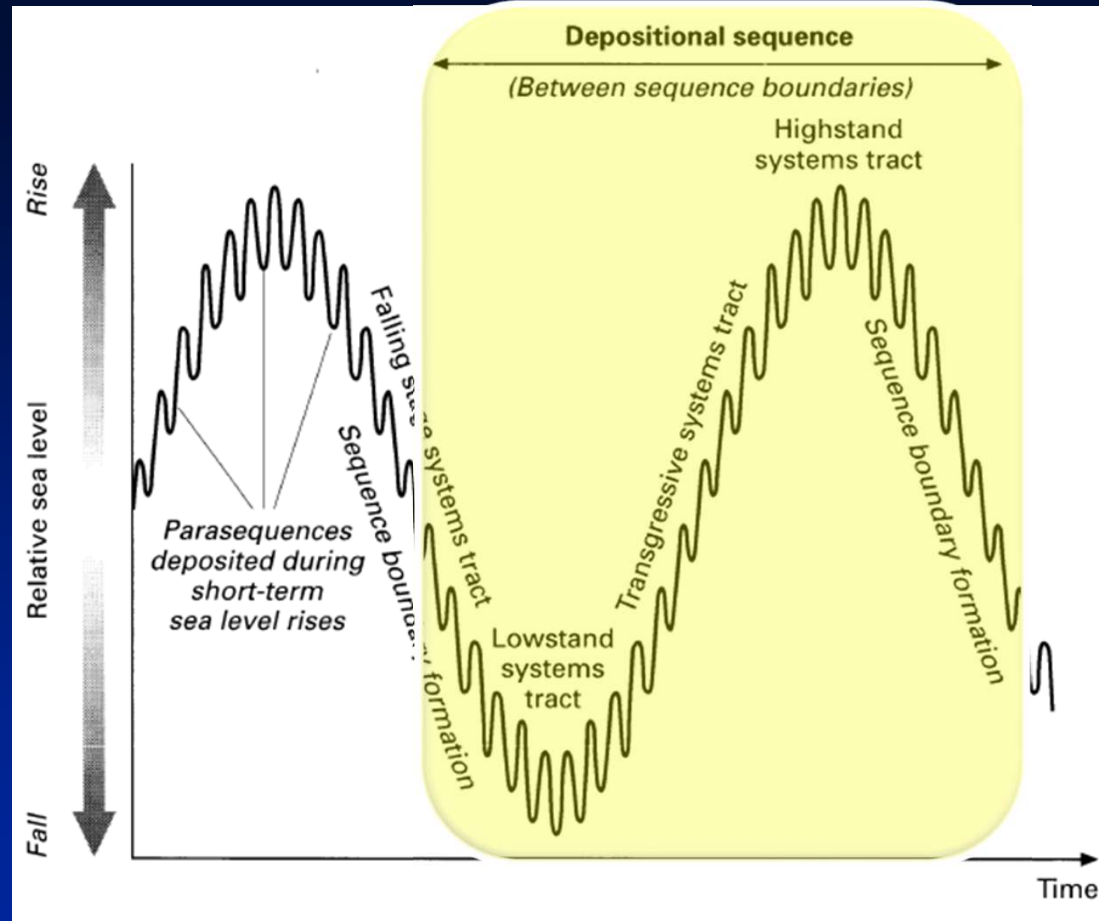
1980'lerden bu yana,
istif stratigrafisi yaklaşımı
Kuvaterner yaşlı istiflere
başarılı bir şekilde uygulanmaktadır

Sismik kesitlerde
geometrik istif analizi yaparak
deniz seviyesi eğrileri
yeniden kurulabilmiştir

Hiyerarşi

- 1) **Çökeltme İstifi**
- 2) **Sistem izleri**: Eş çökeltme sistemi dizisi
- 3) **Parasequence set** (İstiflenme paterni: progradational, aggradational, retrogradational)
- 4) **Parasequence** (bounded by flooding surfaces)
- 5) **Taşkın yüzeyi**

Çökme Sistemi (Depositional sequence):



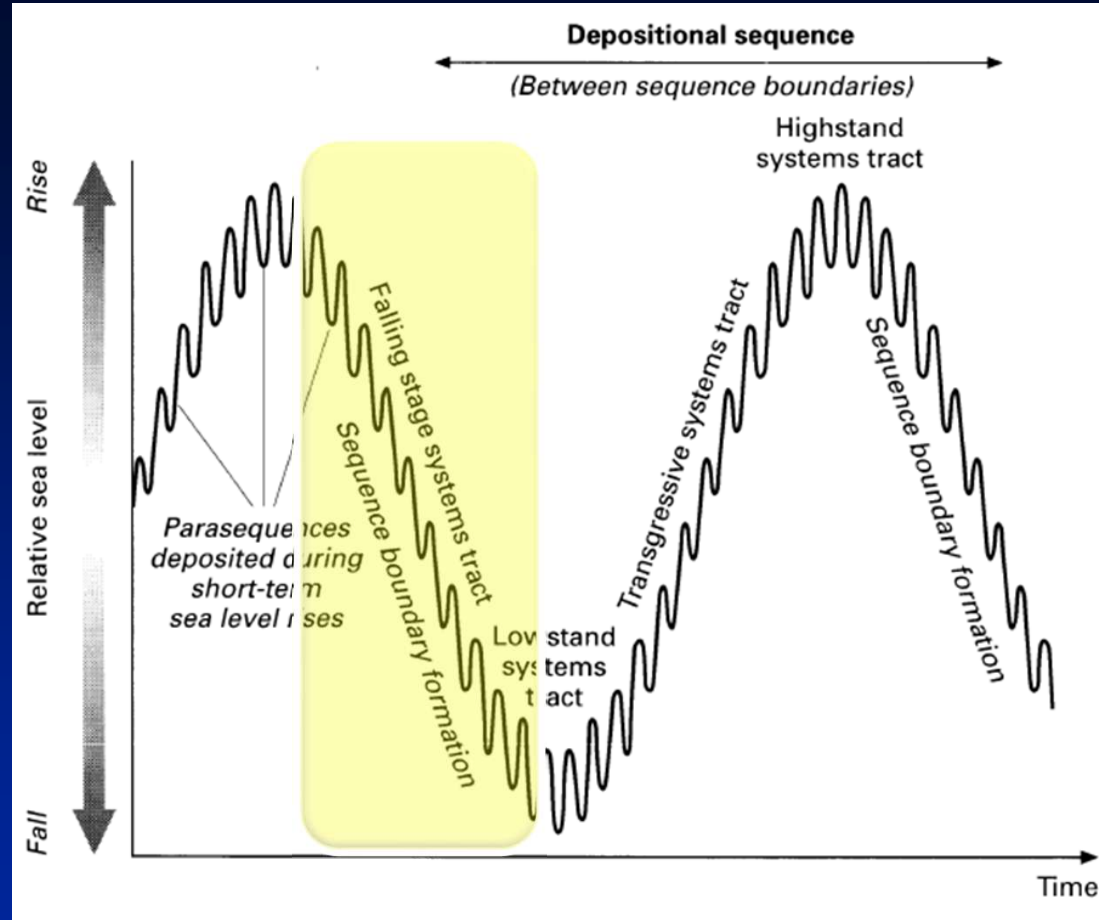
Çökme Sistemi (Depositional sequence): litofasiyesin üç boyutlu topluluğu, kökensei olarak aktif (güncel) veya önerilen (eski) işlemler ve ortamlar (ör, flüviyal, deltayık, bariyer adaları)

Sistem İzi (System tract)

Bir çökeltme sisteminin alt bölümü

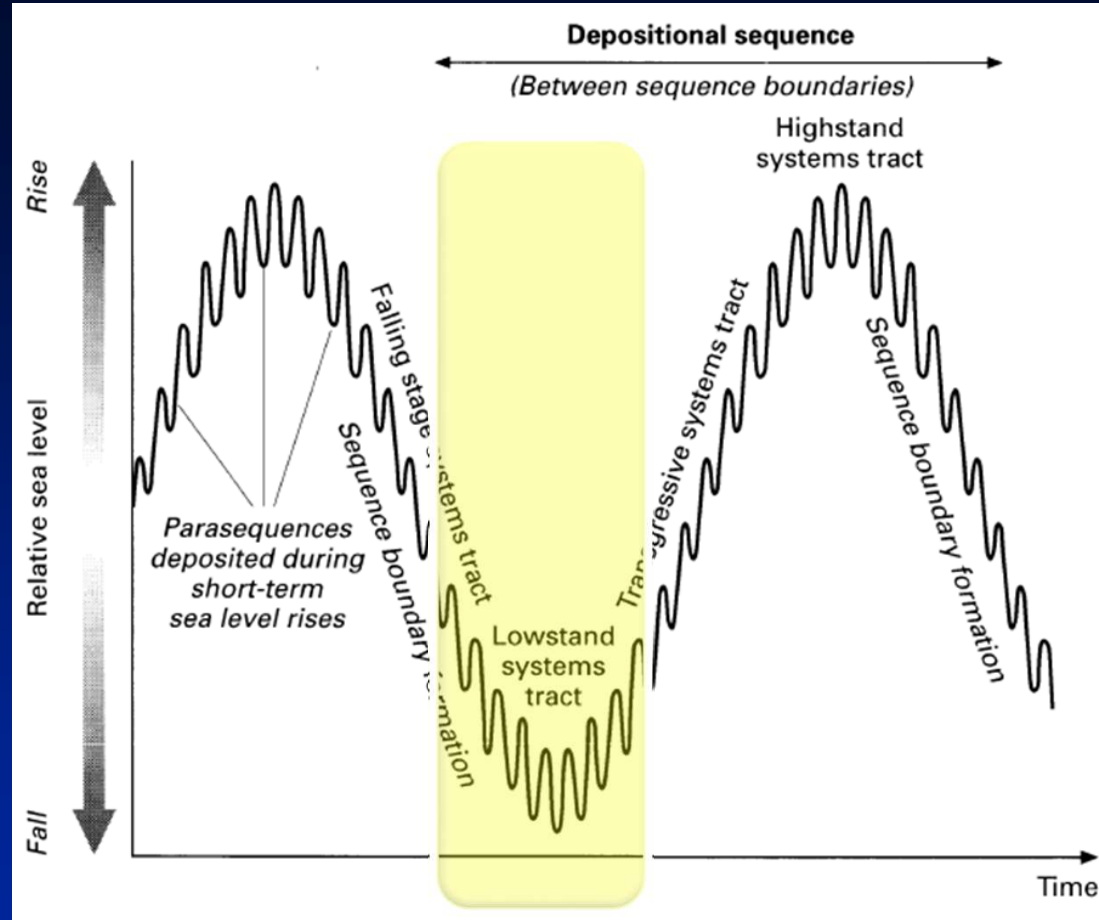
Dört ana tür vardır

Düşme Evresi (Falling-stage):



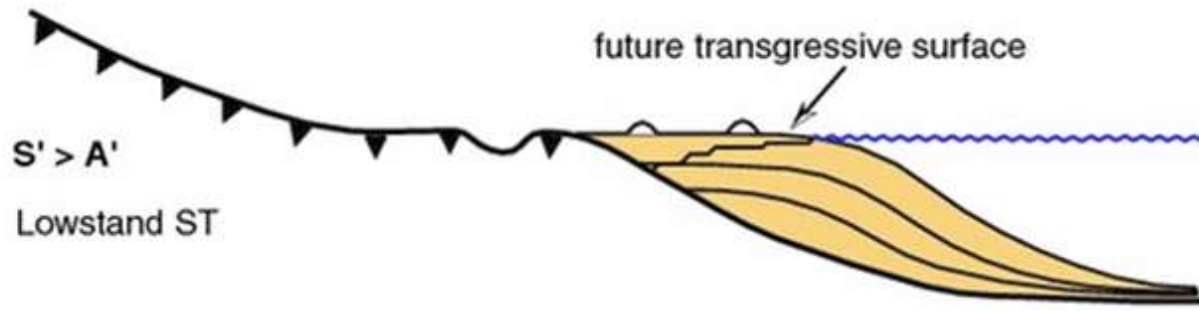
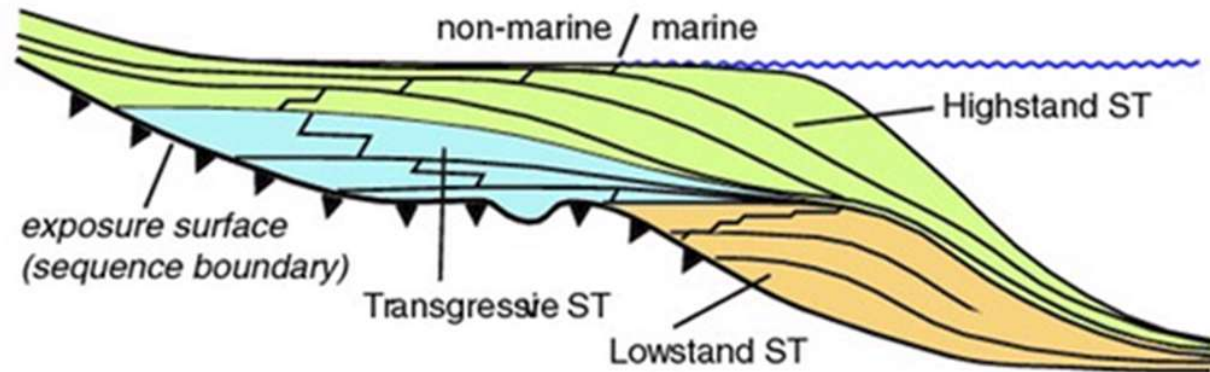
Düşme Evresi (Falling-stage): Deniz düzeyinin yüksekten alçağa geçmesi sürecindeki çökel birikimi

Alçak Düzey (Lowstand)



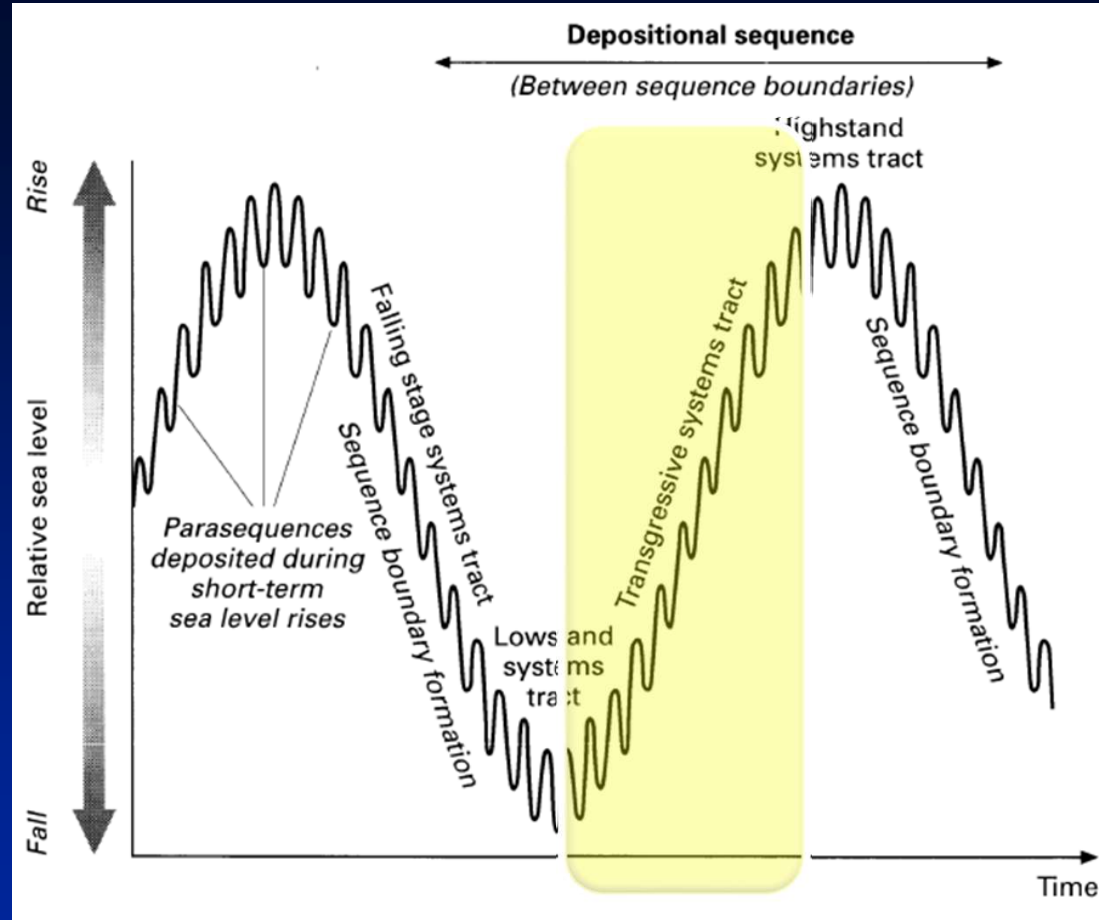
-Alçak Düzey (Lowstand): Düşük deniz düzeyi ve erken deniz düzeyi yükselmesi sürecindeki çökel birikimi

(a) Standard model of stratigraphic sequences



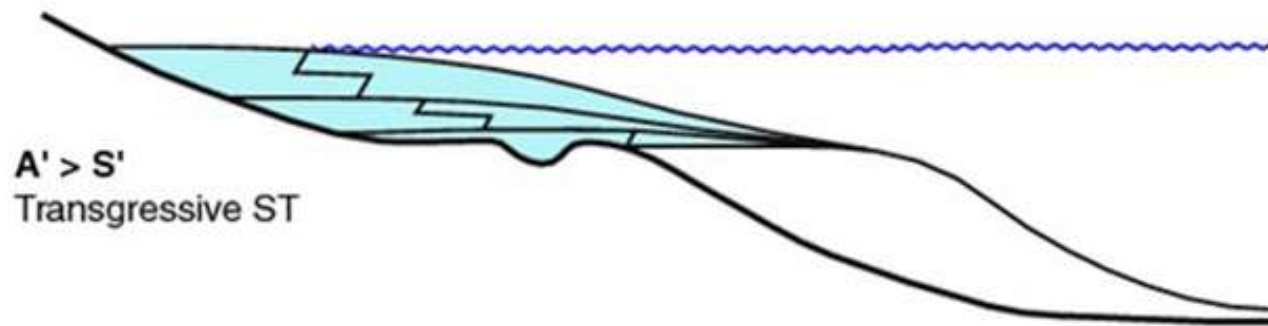
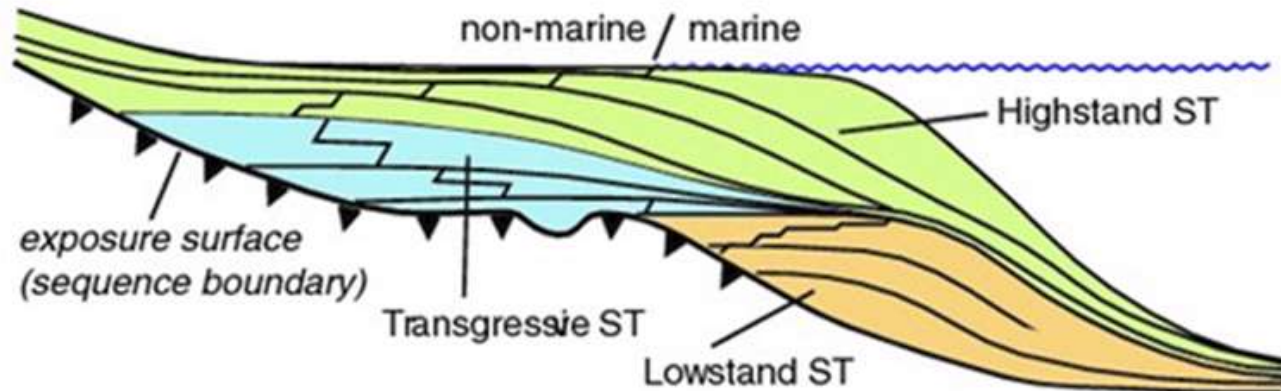
Alçak Düzey (Lowstand): Düşük deniz düzeyi ve erken deniz düzeyi yükselmesi sürecindeki çökel birikimi

Transgresif



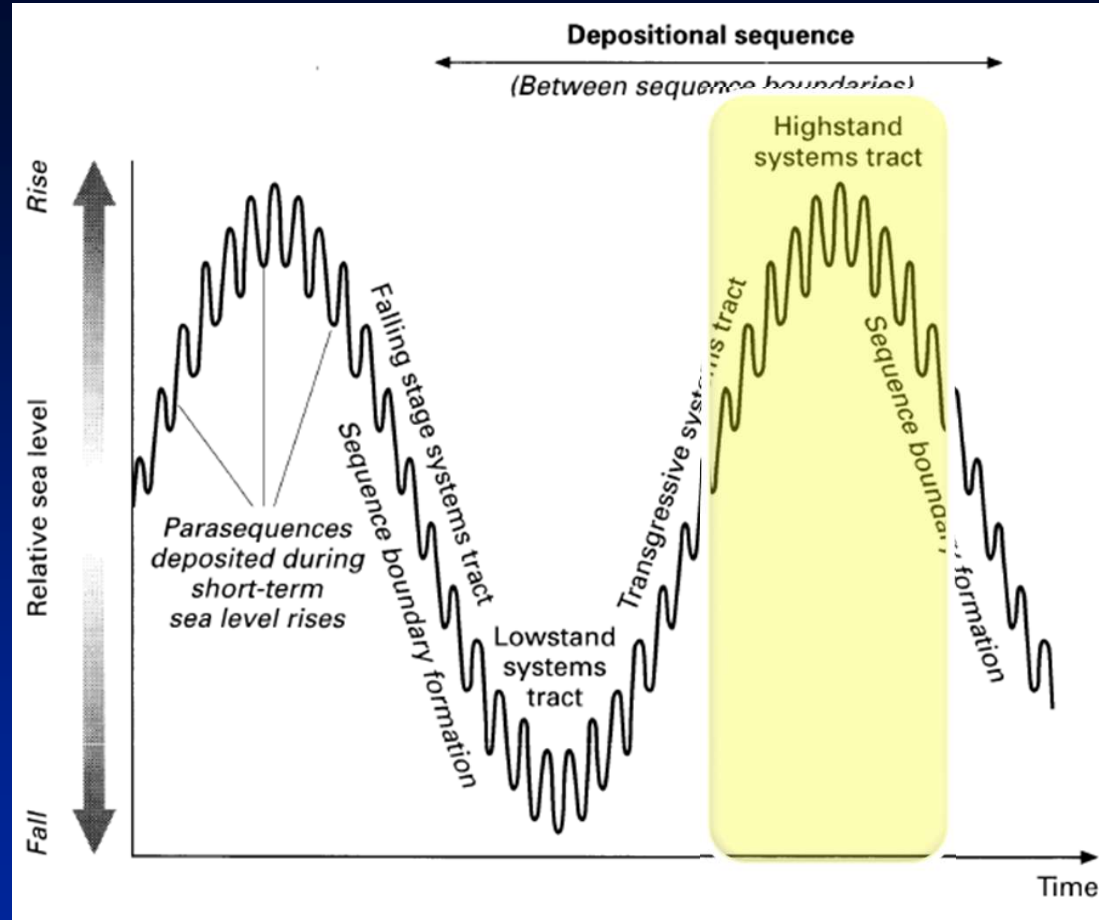
-**Transgresif**: Yükselen deniz düzeyi sürecinde çökel birikimi

(a) Standard model of stratigraphic sequences

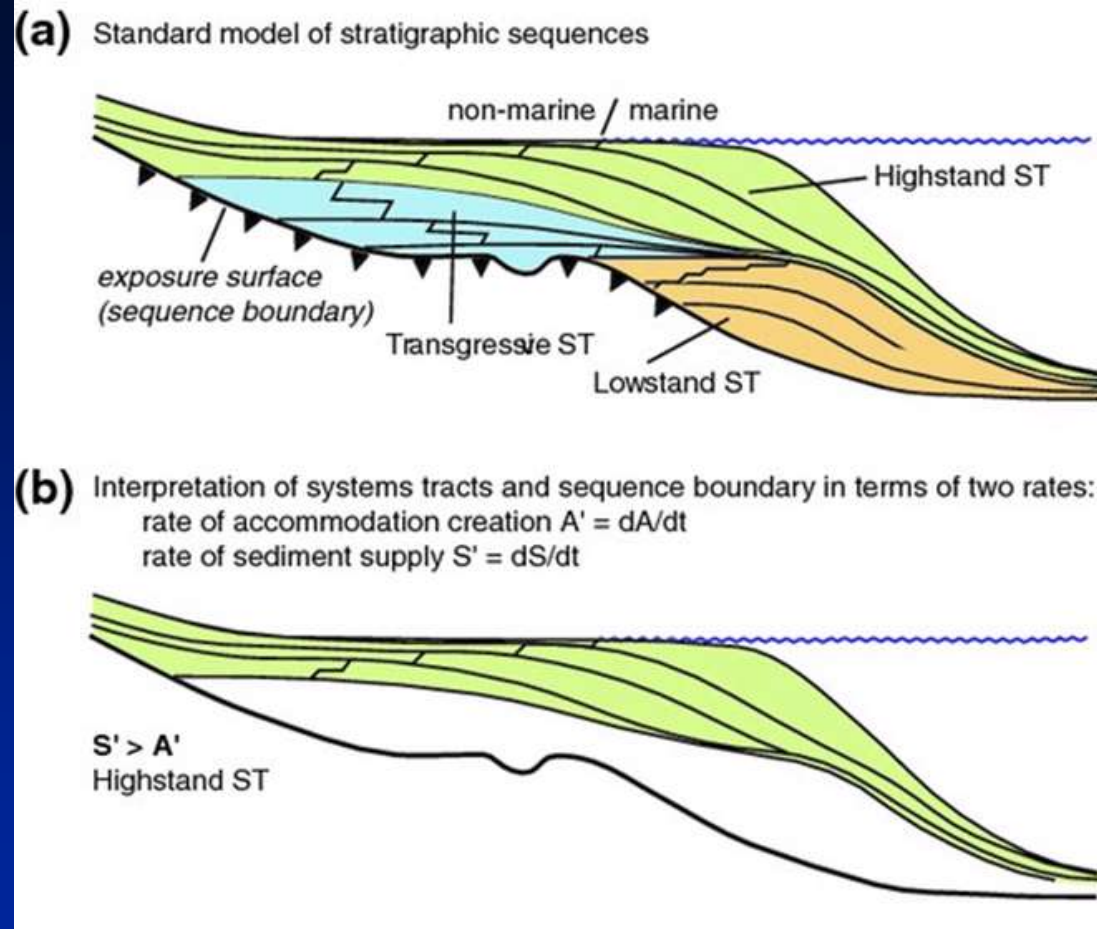


Transgresif: Yükselen deniz düzeyi sürecinde çökel birikimi

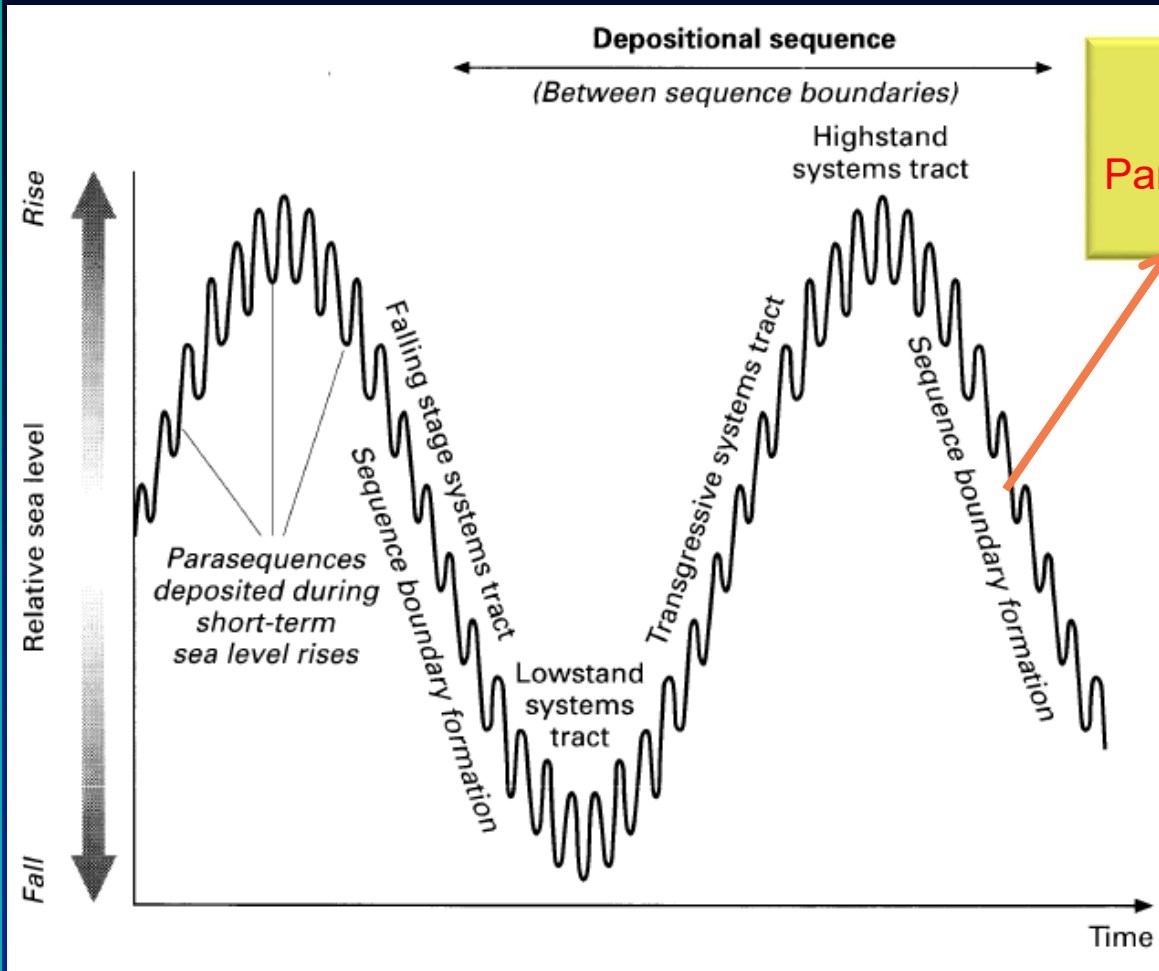
Yüksek Düzey (Highstand)



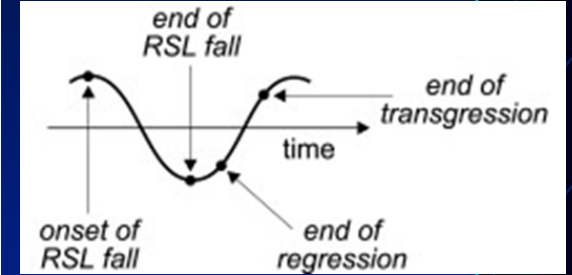
-Yüksek Düzey (Highstand): yüksek deniz düzeyi boyunca çökel birikmesi



Yüksek Düzey (Highstand): yüksek deniz düzeyi boyunca çökel birikmesi

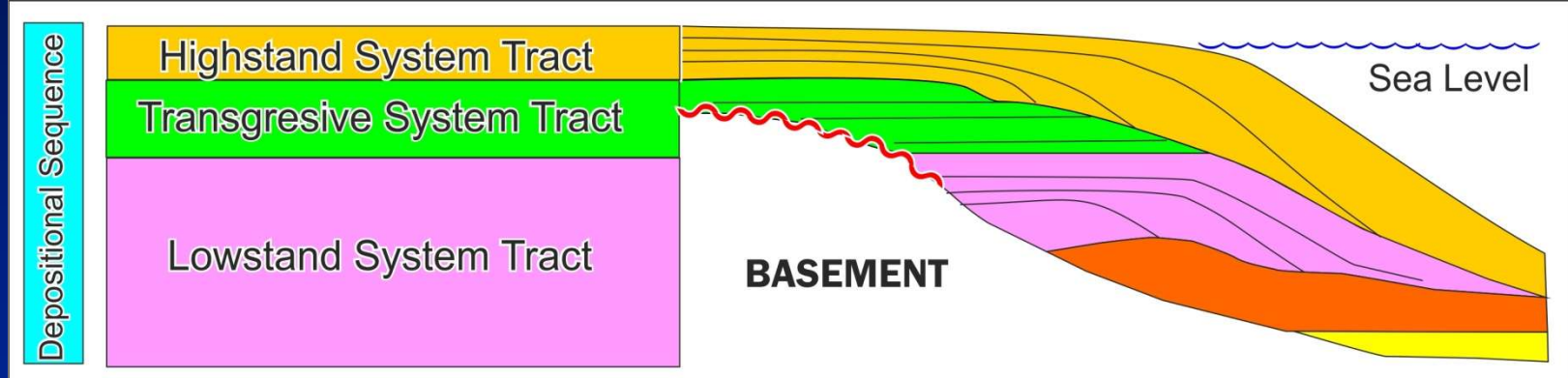


Kısa süreli
Değişimler
Parasequence ler
çökelir



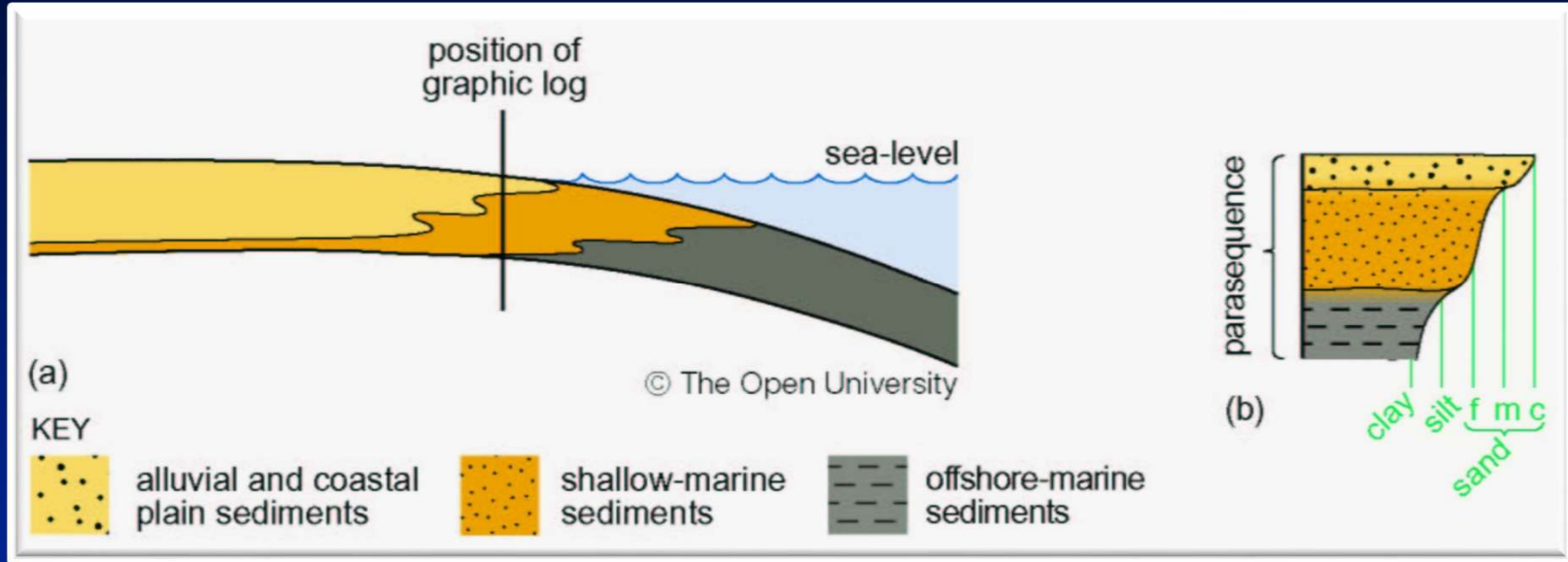
Uzun süreli deniz düzeyi değişimleri ile kısa süreli deniz düzeyi değişimlerinin birlikte gösterildiği eğri

BİR İSTİF

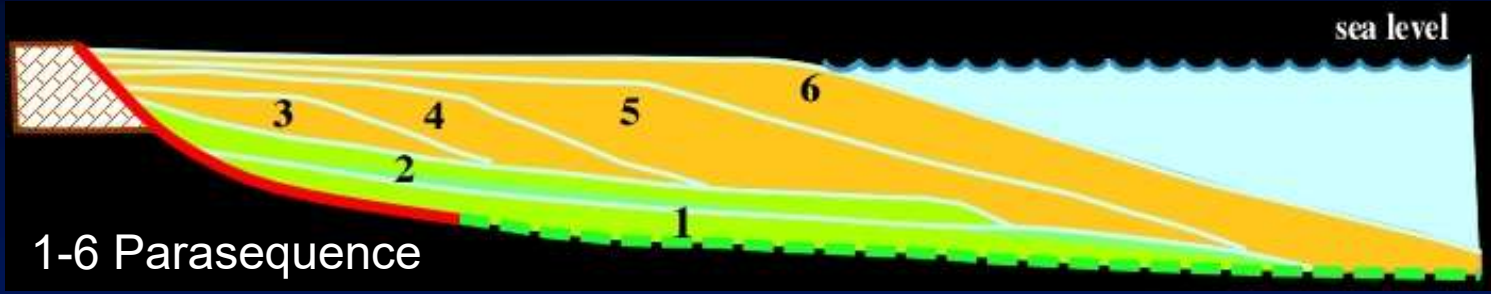


Uyumsuzluklar arasındaki yaş aralığı 0.5 ve 3-5my dır

Bir Parasequence

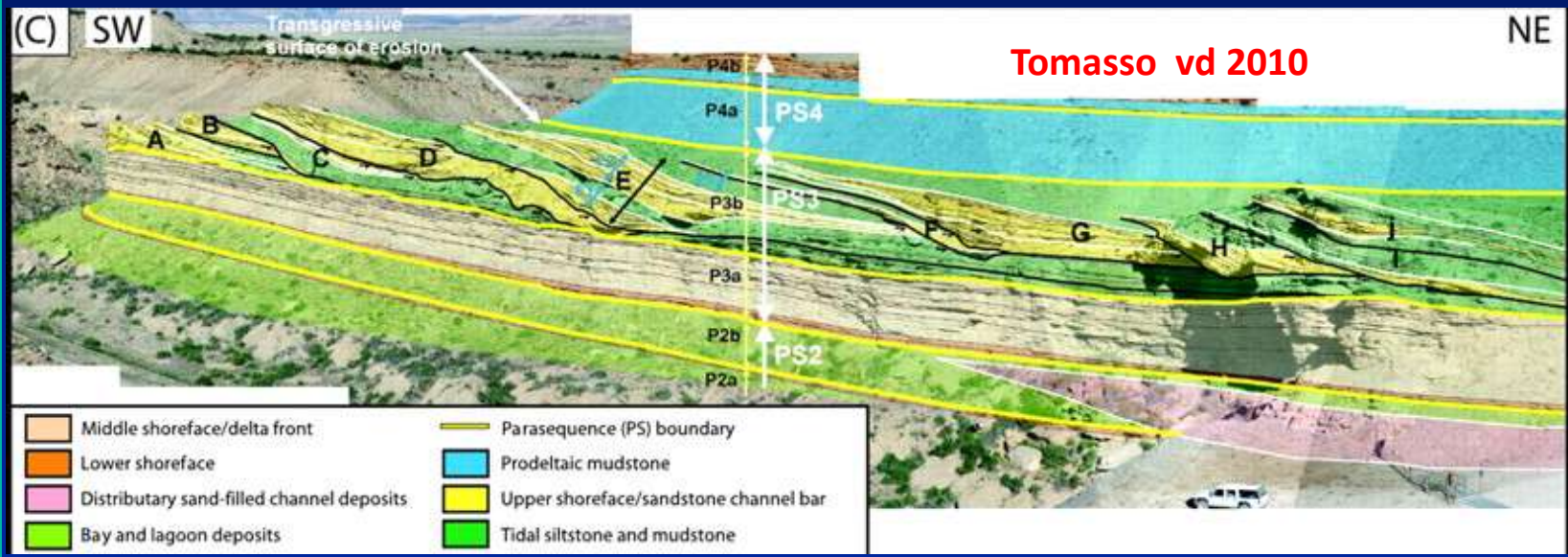


Parasequence,
kökensele ilişkili katman veya deniz taşma yüzeyleri ile ve onların eşdeğeri yüzeylerle sınırlanmış olan katman setlerinin nispeten uyumlu olduğu istiftir



1-6 Parasequence

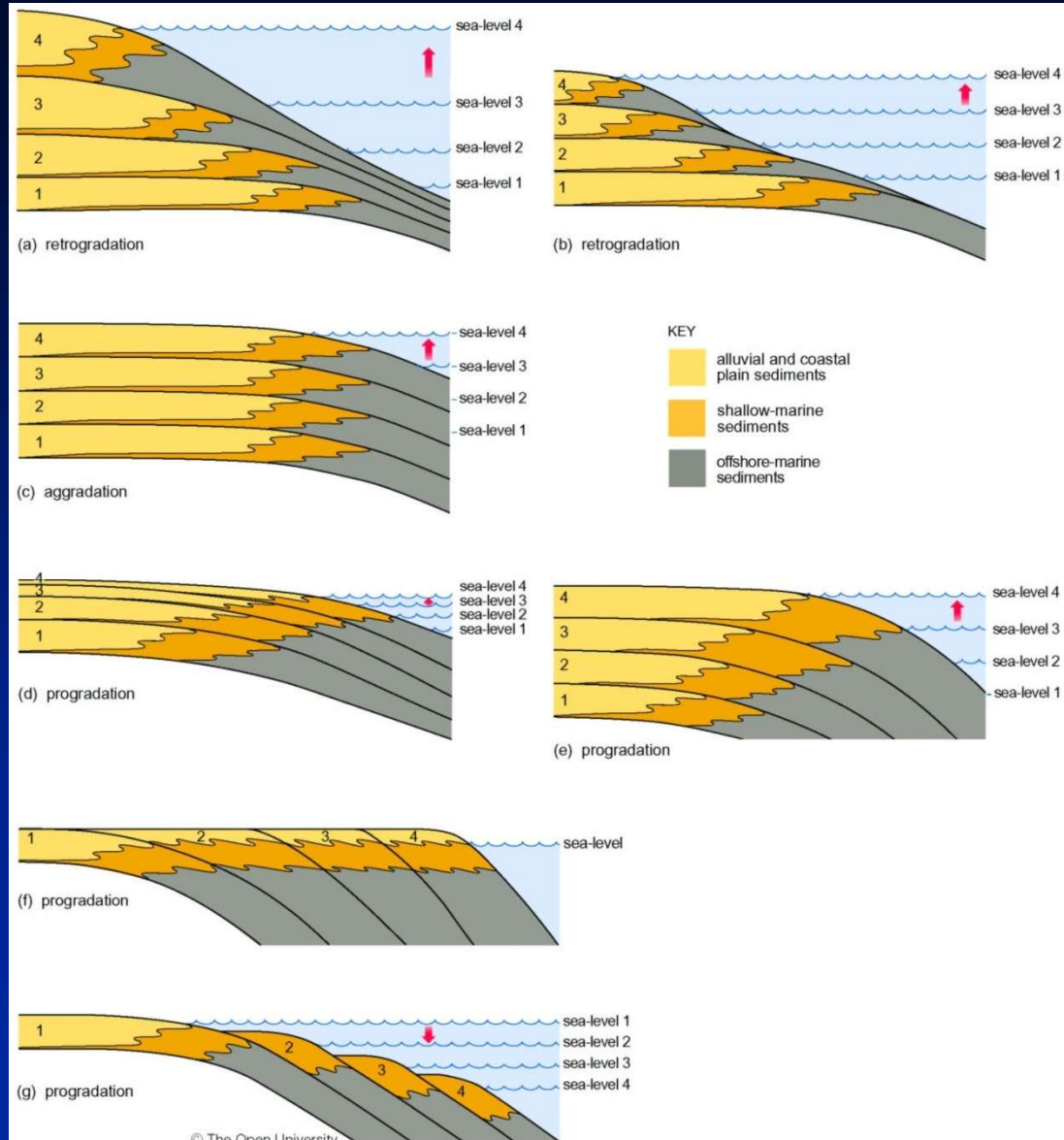
1 den 6 ya kadar olanlar parasequence dir



Tomasso vd 2010

PS: Parasequence sınırları

Parasequence lerin stratigrafik konumları



▶ TST

▶ HST

▶ RST

Depositional elements

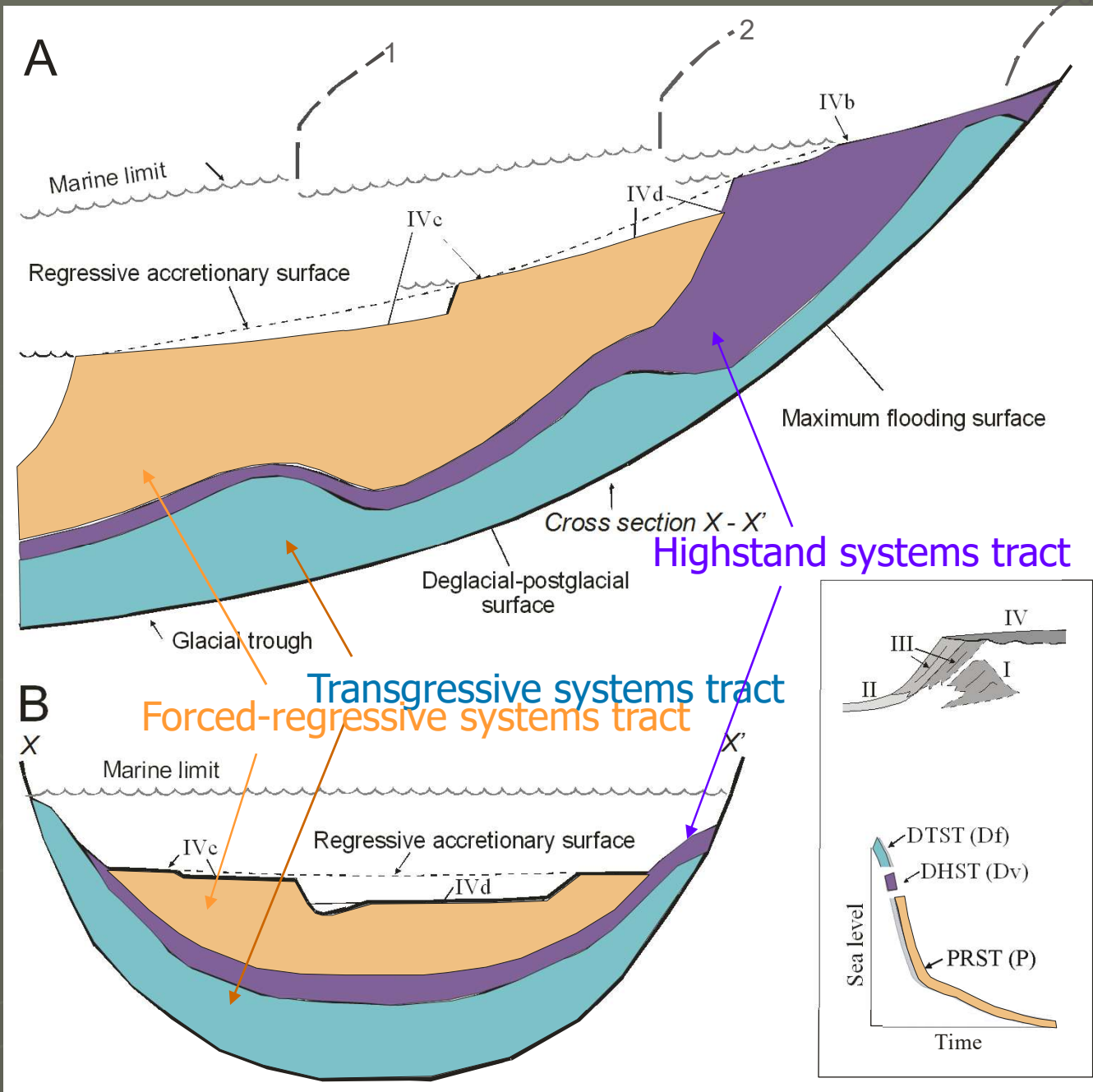
- IV** Terrace top
 - IVd - Fluvial (P)
 - IVc - Delta topset (P)
 - IVa/IVb - Glaciofluvial delta topset (Df/Dv)
- III** Delta foreset
 - IIIc - Delta foreset (P)
 - IIIa/IIIb - Glaciofluvial delta foreset (Df/Dv)
- II** Fjord floor
 - IId - Prodelta (P)
 - IIC - Marine (P)
 - IIa/IIb - Glaciomarine (Df/Dv)
- I** Ice-contact (Df)

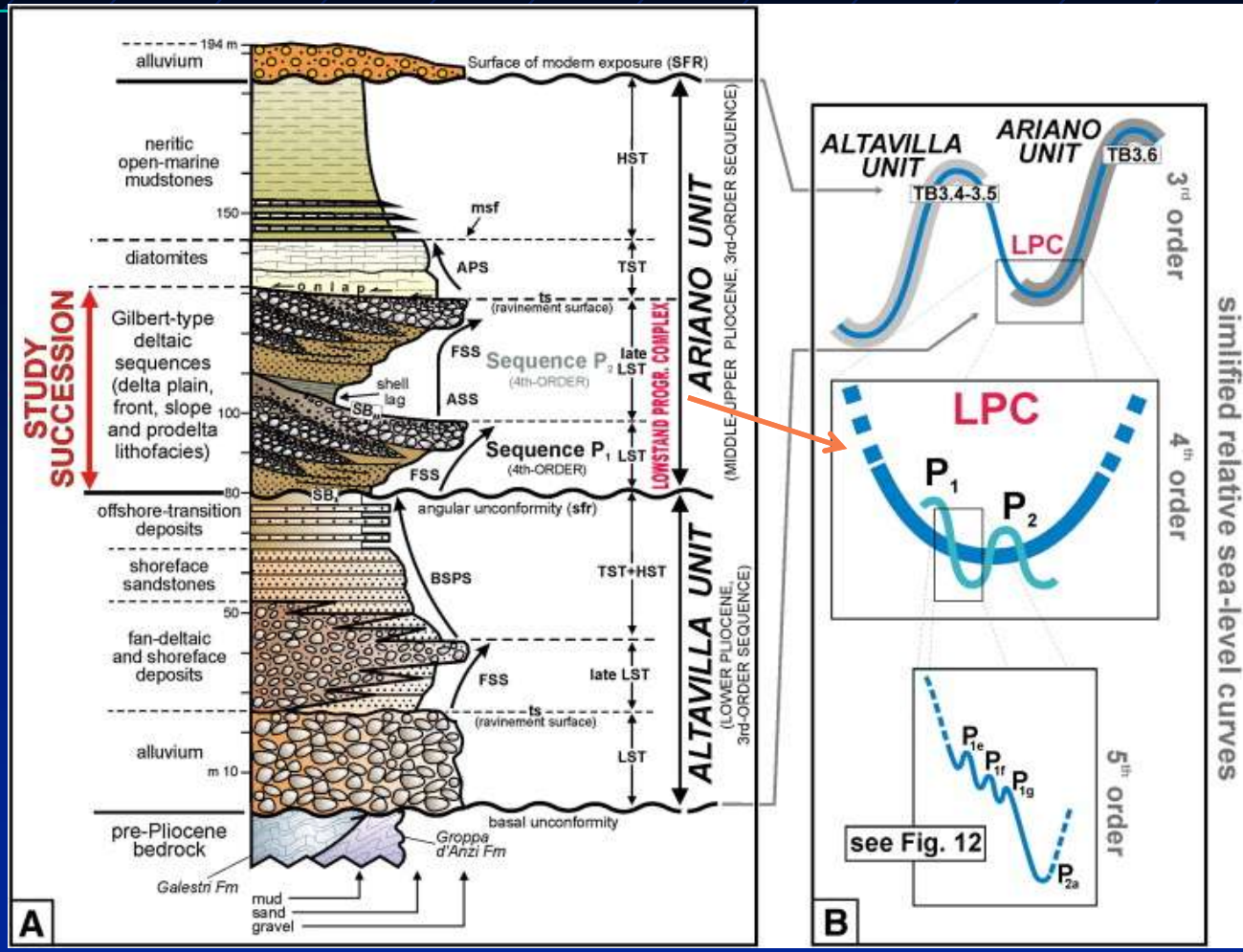
Depositional episodes/sequence tracts

- P** Postglacial forced regressive (PRST)
- DV** Deglacial (valley glacier) highstand (DHST)
- Df** Deglacial (fjord glacier) transgressive (DTST)

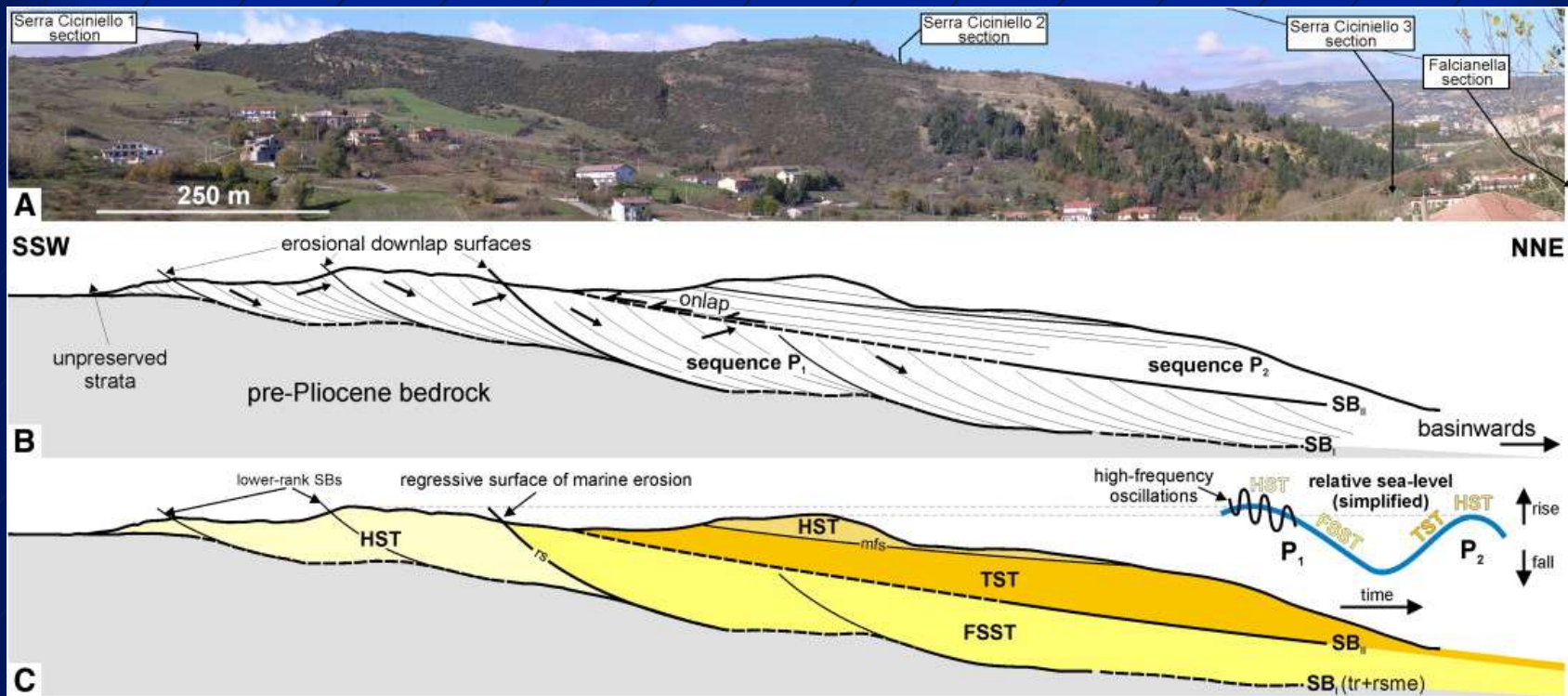
Bounding surfaces

- Fluvial accretion surface
- ~~~~~ Fluvial erosion surface
- ~~~~~ Deltaic erosion surface



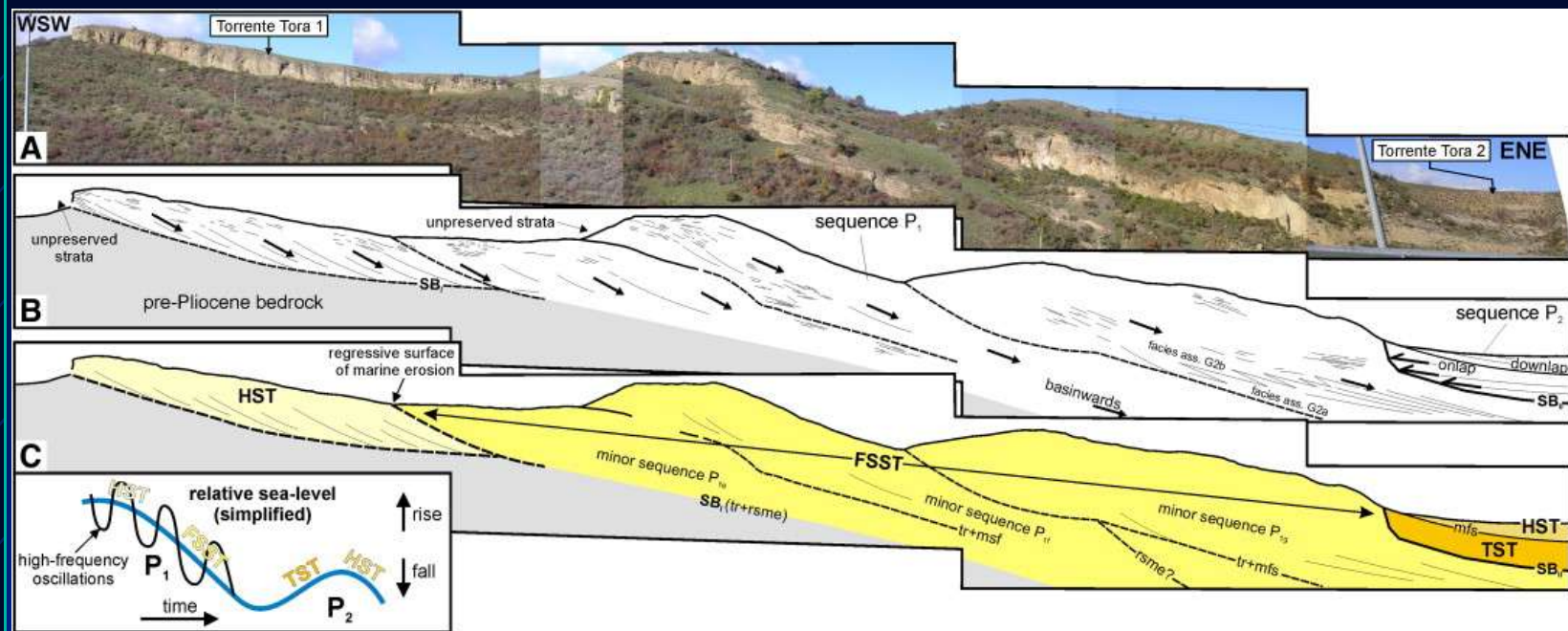


(A) General stratigraphy of the Pliocene infill of the Potenza Basin and the interval studied in this paper. The succession comprises two cycles, the Altavilla and Ariano units, each interpreted here as 3rd-order depositional sequences. The studied interval represents a lowstand prograding complex and is composed of two stacked progradational 4th-order units. Letter symbols: ts = transgressive surface; msf = maximum flooding surface; sfr = surface of forced regression; FSS = forward-stepping (regressive) sequence set; BSPS = back-stepping (transgressive) parasequence set; APS = aggradational parasequence set; LST = lowstand systems tract; TST = transgressive systems tract; HST = highstand systems tract. (B) Simplified relative sea-level curves representing the two transgressive 3rd-order cycles TB3.4-3.5 and 3.6 of [Haq et al. \(1987\)](#) of the Early–Middle and Middle–Late Pliocene, respectively. The Lowstand Prograding Complex occupies the lowstand segment of the second cycle and is composed, in turn, of two 4th-order cycles during which sequences P₁ and P₂ formed. In turn, sequence P₁ is composed of a series of 5th-order deltaic sequences.



Deniz düzeyi eğrisine dikkat

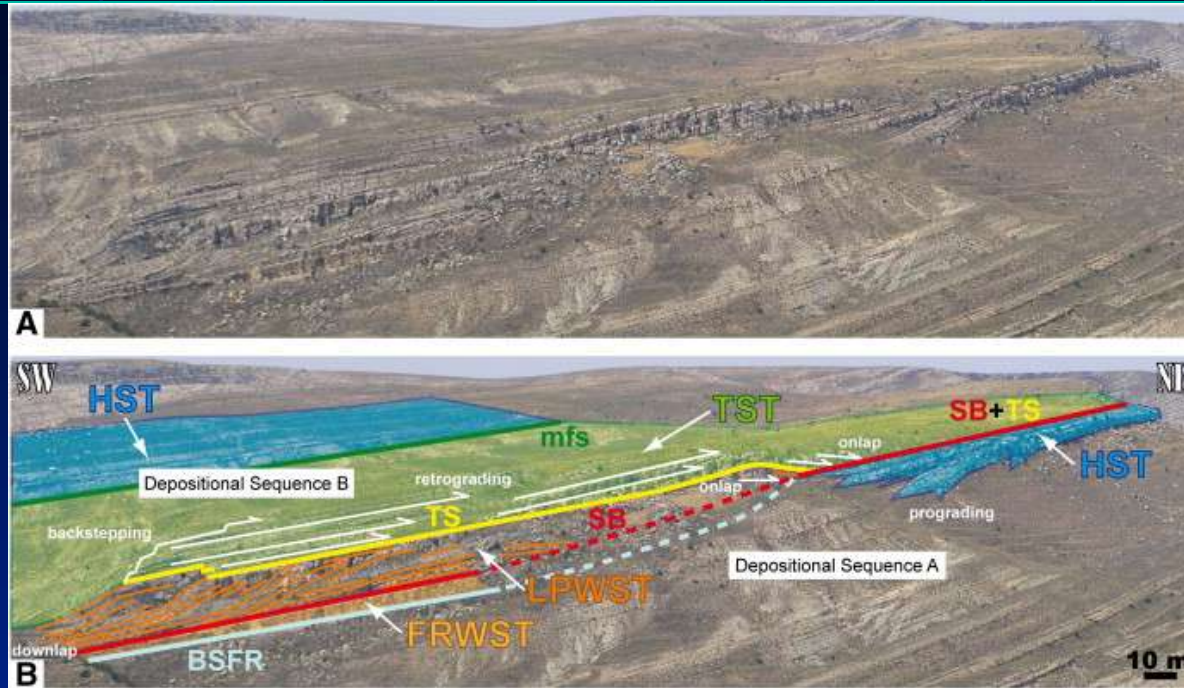
- (A) Photomosaic of the Serra Ciciniello section and location of stratigraphic logs.
- (B) Line-drawing of the section showing the two 4th-order depositional sequences, their internal architectures and main bounding surfaces.
- (C) Sequence-stratigraphic interpretation of the Serra Ciciniello section and simplified curve of relative sea-level changes.



Deniz düzeyi eğrisine dikkat

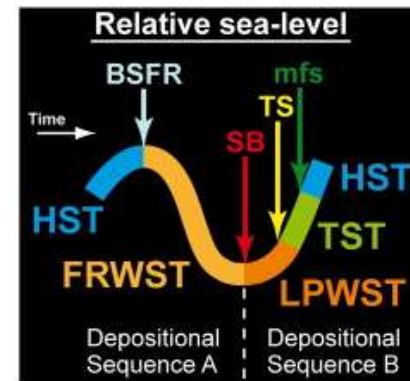
(A) Photomosaic of the Torre Tora section. (B) Line-drawing of the section showing the two depositional sequences, their internal architectures and main bounding surfaces. (C) Sequence-stratigraphic interpretation of the Torre Tora section and simplified curve of relative sea-level changes.

Örnek



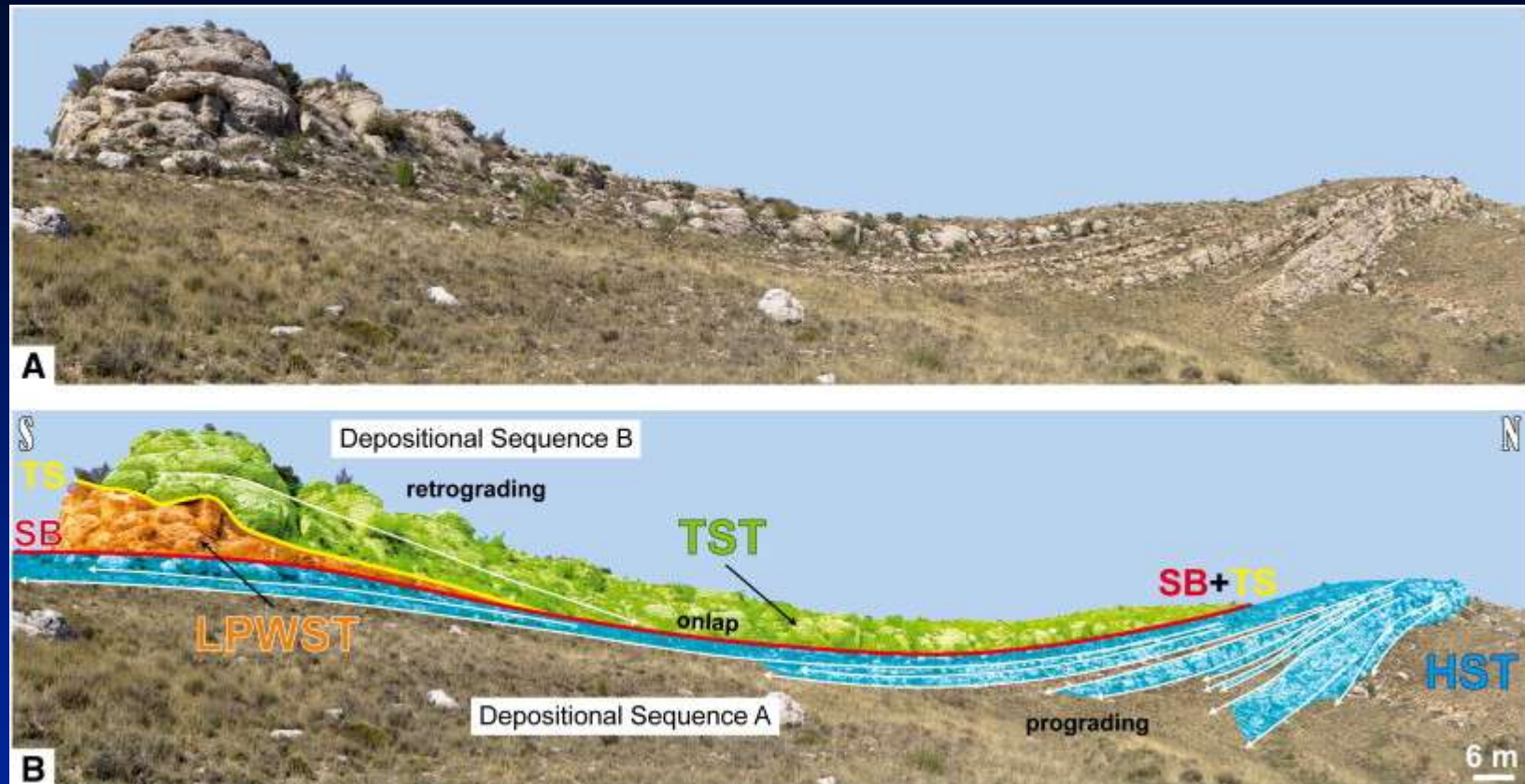
KEY

- HST: Highstand Systems Tract
- FRWST: Forced Regressive Wedge Systems Tract
- LPWST: Lowstand Prograding Wedge Systems Tract
- TST: Transgressive Systems Tract
- BSFR: Basal Surface of Forced Regression
- SB: Sequence Boundary
- TS: Transgressive Surface
- mfs: maximum flooding surface



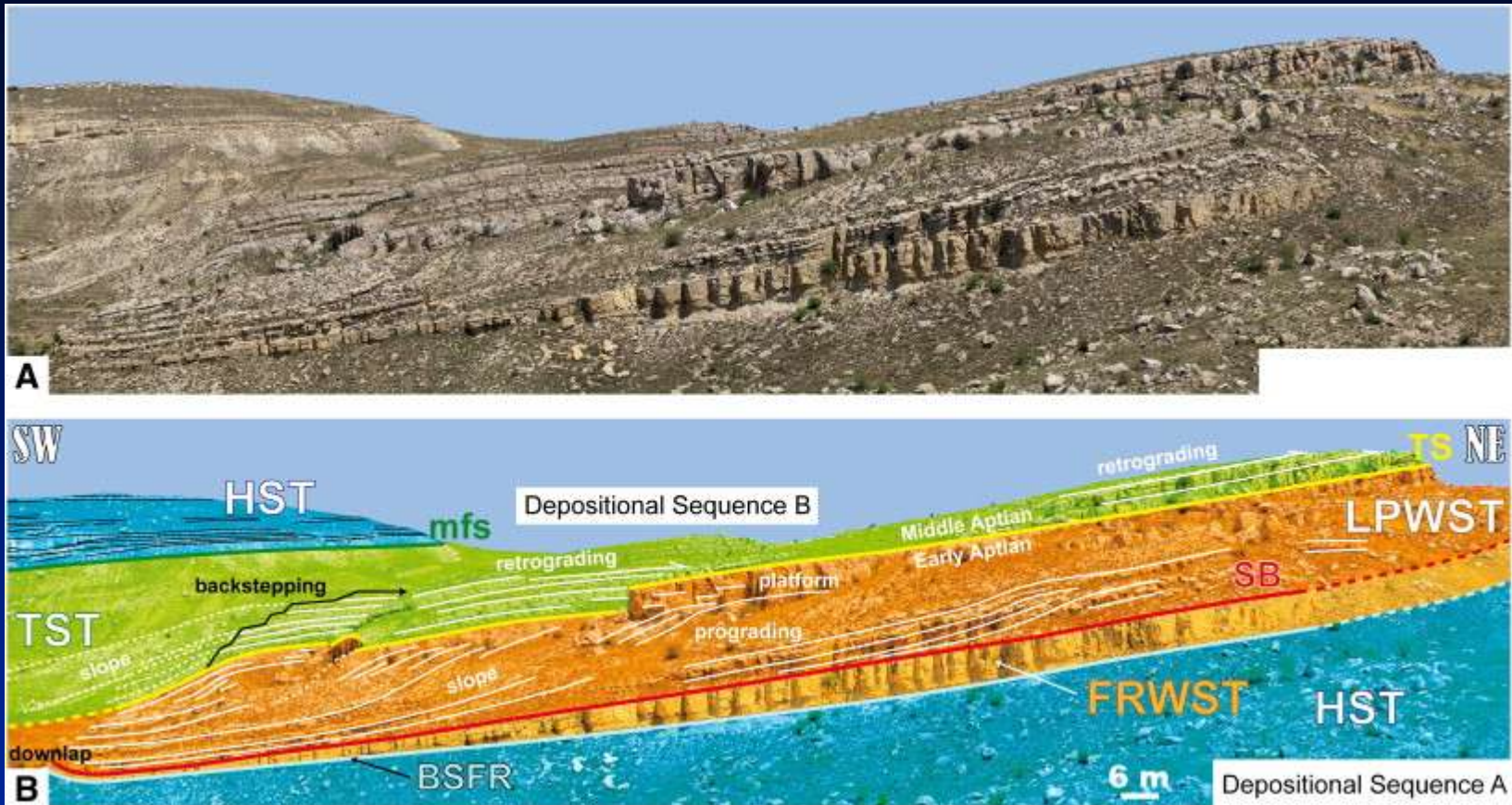
Photograph of platform-to-basin transition at Las Mingachas (A) with the overall sequence stratigraphic interpretation (B) and the stages of relative sea-level.

Örnek

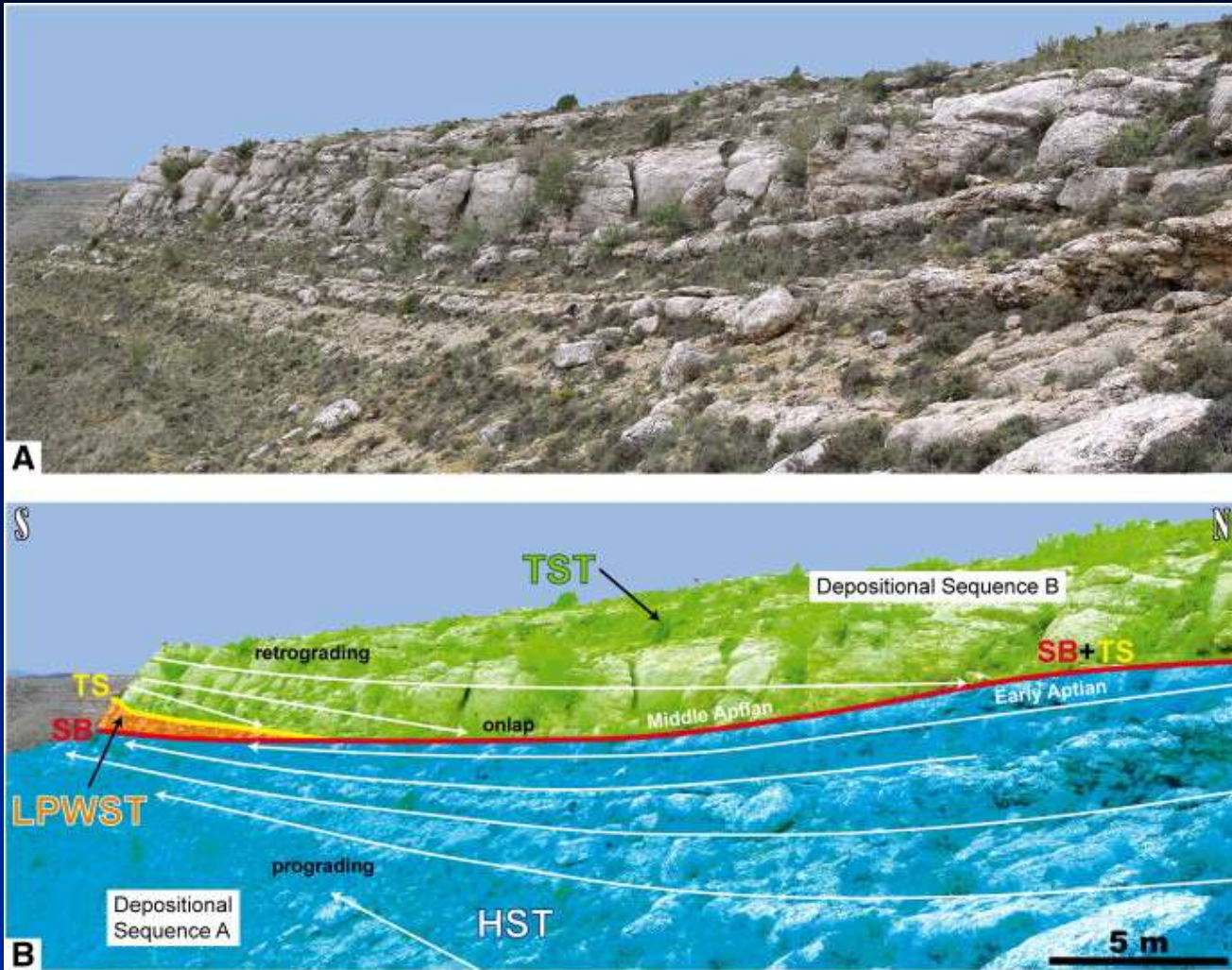


View from the south of the oblique cross-section located in the northeastern part of Las Mingachas (A) displaying the sequence stratigraphic interpretation (B)

Örnek

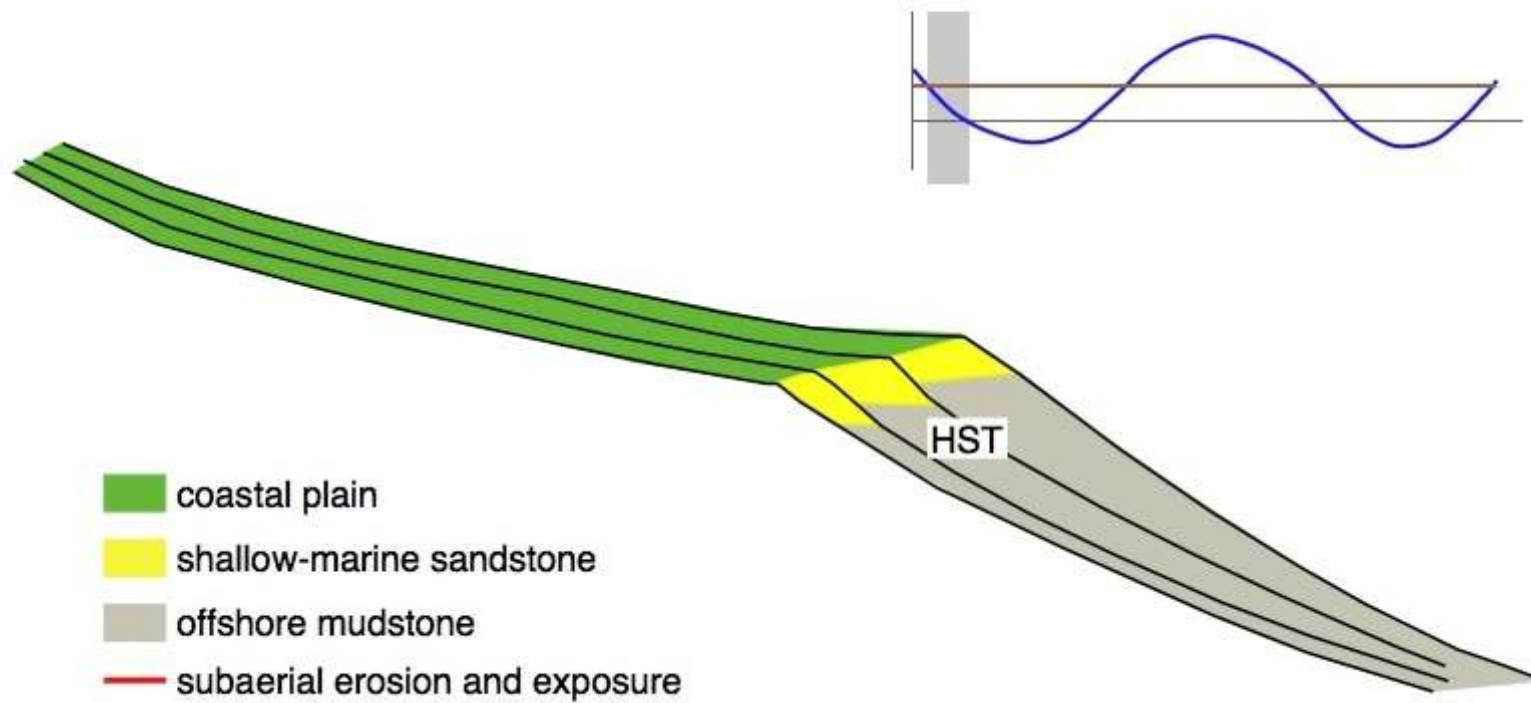


Photograph of the southern part of Las Mingachas (A) showing the sequence stratigraphic interpretation (B).

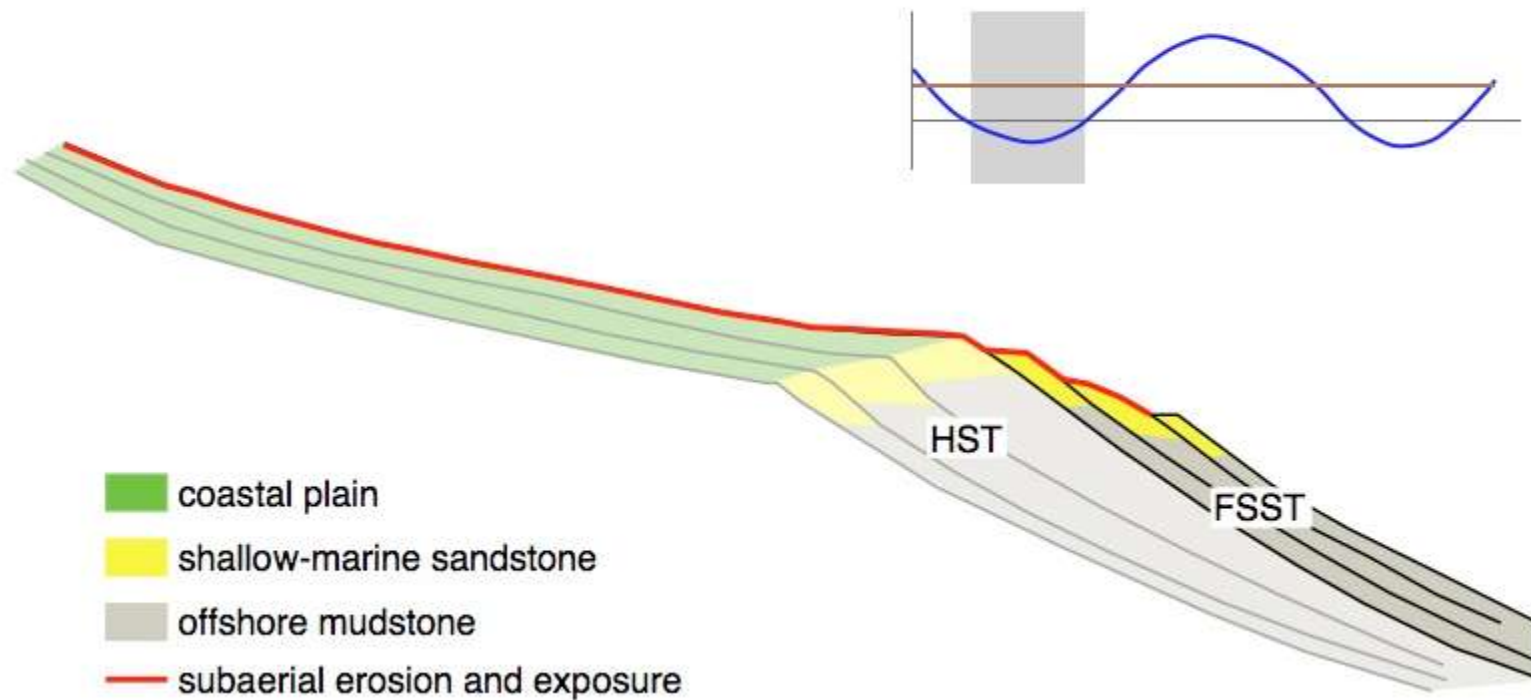


Outcrop photograph of the northeastern part of Las Mingachas area (A) displaying the transgressive platform onlapping the composite (SB + TS) sequence boundary and the sequence stratigraphic interpretation (B)

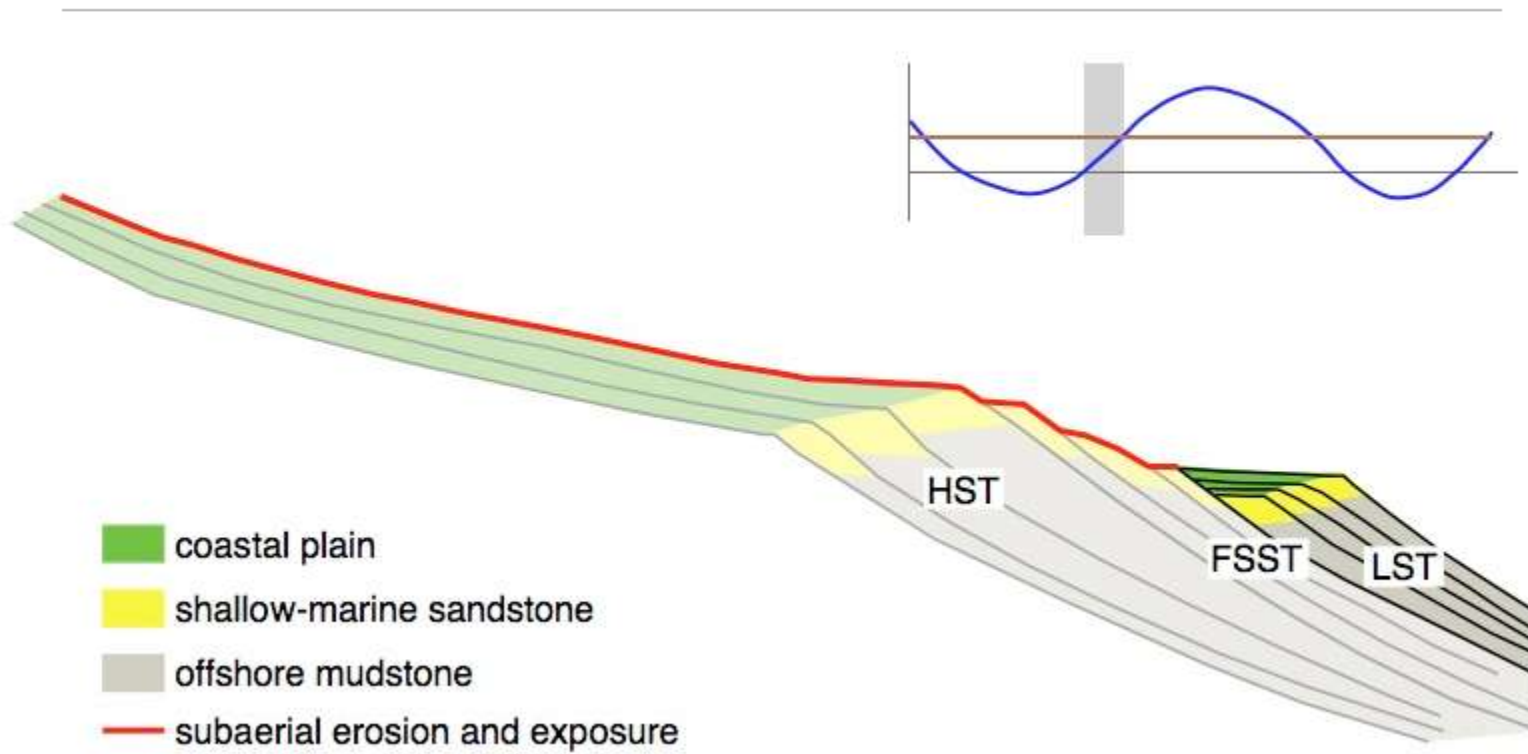
Highstand systems tract



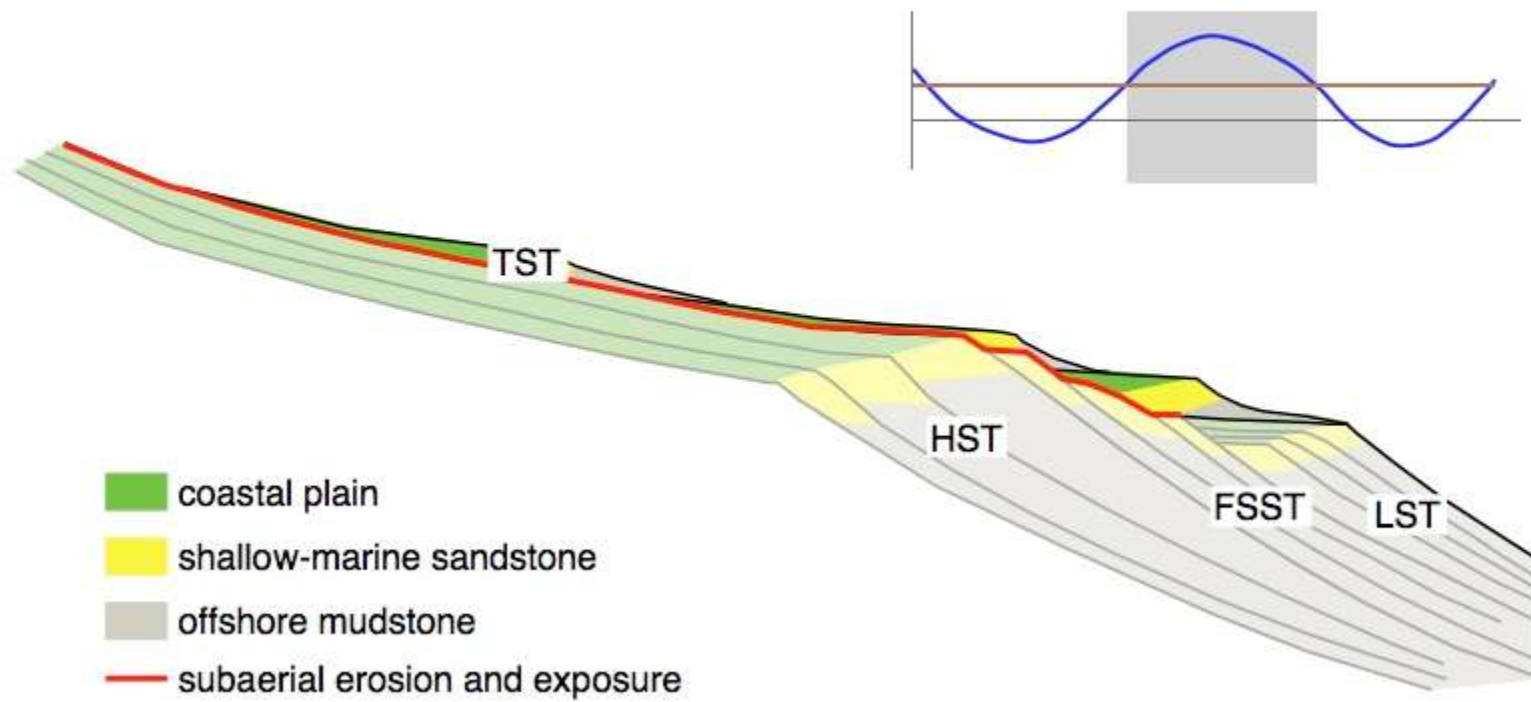
Falling-stage systems tract



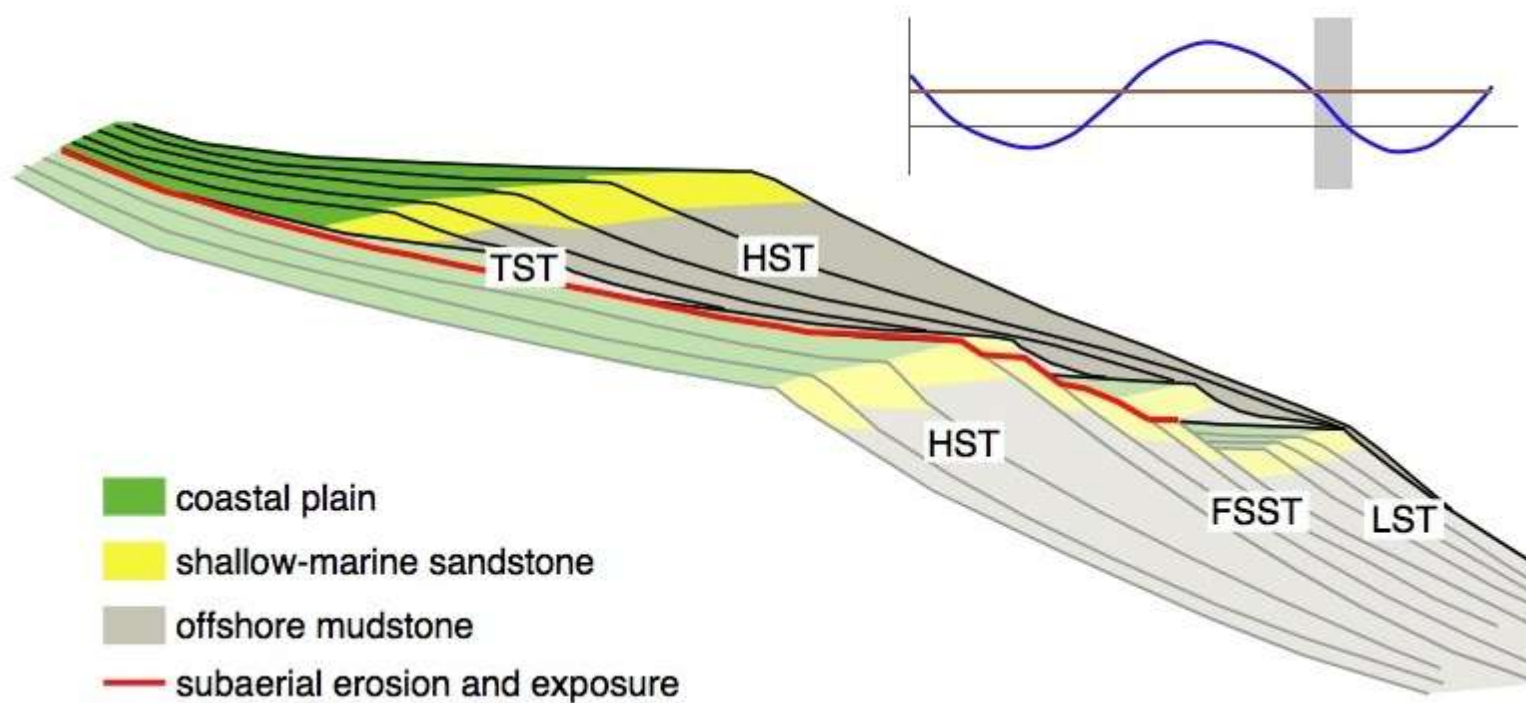
Lowstand systems tract



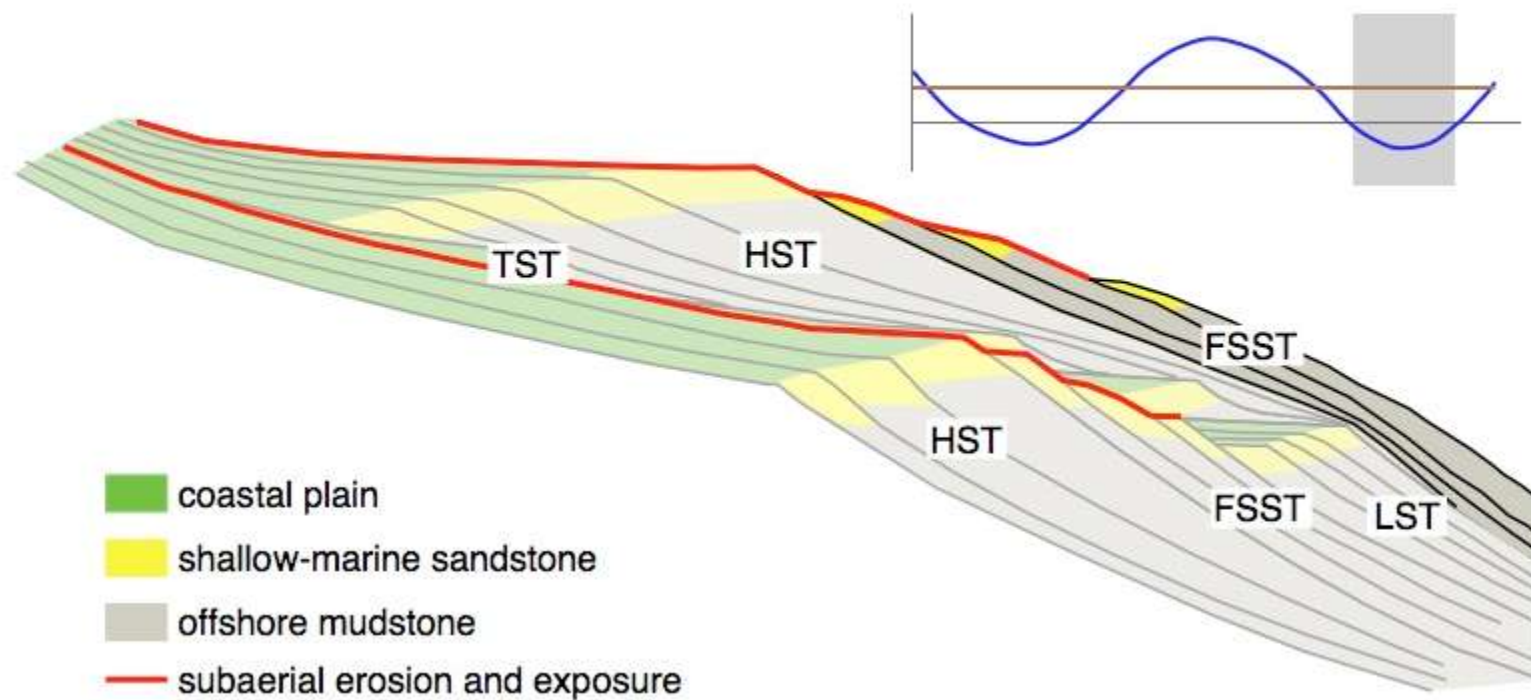
Transgressive systems tract



Highstand systems tract



Falling-stage systems tract



Complete depositional sequence

