

海洋板片下沉到地幔中，会遇到密度更大的岩石，但在压力作用下，海洋板片本身的密度也会增加，they continue to be heavier than the adjacent mantle rocks as they descend into the mantle so long as they remain colder than the surrounding mantle rocks at any depth.

岩石圈和相邻地幔的相变以及任意地幔中随深度的成分变化会使有热量引发的重力不稳定变得复杂起来

slab pull（感觉类似trench pull）

subduction不是简单的弹性流变，部分海沟还存在an elastic - perfectly plastic rheology

增生楔（accreted prism），海洋板块上的沉积层残留在，沉积层是从大陆剥蚀下来的，最后俯冲进入地幔，可以看做陆壳的俯冲。

double seismic zones: The earthquakes in the upper seismic zone, near the upper boundary of the descending lithosphere, are associated with compression. The earthquakes within the descending lithosphere are associated with tension.

俯冲板块成45度，但重力是垂直向下的，为什么不是90度？

一个解释是：the oceanic lithosphere is “foundering” and the trench is migrating oceanward. In this case, the dip angle is determined by the flow kinematics.

另一个解释是：the subducted slab is supported by the induced flow above the slab. The descending lithosphere induces a corner flow in the mantle wedge above it, and the pressure

forces associated with this corner flow result in a dip angle near 45°

尽管660的不连续面对俯冲带有阻挡作用，但板块运动肯定不会在660km的上地幔终止。板块插入660以下，则需要整个地幔对流的作用。

火山链到海沟的距离暗示俯冲角度。

弧后盆地的扩张：

解释一：下沉的板块引起了二次地幔对流，

An alternative hypothesis is that the ocean trench migrates away from an adjacent continent because of the “foundering” of the descending lithosphere