When a wave is generated in a homogeneous medium by a point energy source, spherical wave fronts diverge from the source. Waves are propagated perpendicular to the spherical wave fronts; therefore, wave energy in a spherical sector is distributed over an expanding area as distance from the source increases, and the amplitude of the wave decreases as the distance increases. Spherical divergence correction compensates for this decrease in amplitude and is proportional to the velocity function in the area.

As seismic waves are transmitted through layers of the earth, absorption, scattering, reflection and other factors cause attenuation of wave energy. Absorption is loss of wave energy in the form of heat caused by friction between particles of a medium and is believed to be the principal factor of attenuation. Wave theory and observation show that after correction for spherical divergence, the amplitude of a harmonic of a reflection wave decreases approximately exponentially as a function of reflection time and the exponent is dependent on frequency of the harmonic and composition of materials through which the wave travels. This attenuation of reflection energy or transmission loss is termed inelastic attenuation. The values used to recover this signal loss for this area were an exponential gain of 4 decibels per second from time zero to 4.0 seconds with a constant scaler of -10.0 decibels.