Exploring Pressure in Football

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Definition of pressure in literature?

Pressure = closing down the opponent or other team on defense
Closing down = putting pressure on an offensive player so they have no space or time to operate

Goals of low pressure defending:
• Frustrate the opposition into making mistakes
• Put as many defenders behind the ball as possible
• Every player has to defend
• Given the limited space, it will be difficult for a team to score

Goals of high pressure defending:
• Win the ball as close to your opponent’s goal as possible
• Win the ball as far from your goal as possible
• Pressure the opposition as they receive the ball in their own half

Interactive display of time series and events

How to define, detect and measure pressure?

Pressure target: the ball or a player of the ball possessing team
Threat direction: towards the defended goal or towards the ball (if not possessed)
Pressure zone: the space from within which a defender can obstruct the movement of the pressure target in the threat direction. Zone boundary:

\[
L = D_{back} + \left( \frac{D_{front} - D_{back}}{2} \right)^2 + 0.3z
\]

\[
z = \frac{(1 - \cos \theta)}{2}
\]

The amount of the pressure:

\[
p = \left( 1 - \frac{d}{L} \right)^2 \times 100\%
\]

\(p\) depends on the distance to the pressure target \(d\) and the angle to the threat direction \(\theta\)

Low pressure defending

High pressure defending