Title (en)

PROTECTIVE HELMET FOR MITIGATION OF LINEAR AND ROTATIONAL ACCELERATION

Title (de)

SCHUTZHELM ZUR ABSCHWÄCHUNG VON LINEAREN UND DREHBESCHLEUNIGUNGEN

Title (fr)

CASQUE DE PROTECTION POUR ATTÉNUER UNE ACCÉLÉRATION LINÉAIRE ET ROTATIVE

Publication

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Application

EP 13816787 A 20130710

Priority

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- US 2013049968 W 20130710

Abstract (en)

[origin: US2014013492A1] Embodiments provide protective helmets configured to protect the head from linear and rotational acceleration in an impact. In various embodiments, the helmets may include an outer layer, an inner layer, and at least one intermediate layer coupled to the outer and inner layers by alternate fixation sites, thereby providing a suspension between the outer and inner layers. In various embodiments, the intermediate layer may be made from a honeycomb material, such as an aluminum honeycomb. In use, in-plane deformation of the honeycomb may allow for translation of the outer layer in a substantially tangential direction relative to the inner layer, thereby mitigating rotational acceleration imparted by the tangential impact component. Additionally, crumpling of the honeycomb in a substantially non-elastic manner may deplete impact energy to minimize the elastic rebound that can contribute to linear and rotational head acceleration, thereby mitigating linear acceleration imparted by the perpendicular impact component.

IPC 8 full level

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