

DISCIPLINA: GEODÉSIA FÍSICA (3 CRÉDITOS)

- 1 – Introdução.
- 2 – Campo da Gravidade. 2.1: Gravitação e Gravidade. 2.2: Potencial da Gravidade. 2.2.1: Sentido Físico do Potencial da Gravidade.
- 3 – Desenvolvimento do Potencial Gravitacional (W_g) em série de harmônicos esféricos. 3.1: Exemplos de funções associadas de Legendre. 3.2: Representação Geométrica dos Harmônicos Esféricos Zonais. 3.3: Representação Geométrica dos Harmônicos Esféricos Setoriais. 3.4: Representação Geométrica dos Harmônicos Esféricos Tesserais. 3.5 Significado físico dos harmônicos esféricos. 3.6: Os coeficientes (J_{nm} , K_{nm}) e (C_{nm} , S_{nm}). 3.7: Fórmulas de recorrência.
- 4 – Modelos de representação da Terra. 4.1: A Terra normal.
- 5 – Esferopotencial. 5.1: O coeficiente $J_{2,0}$. 5.2: Gravidade normal. 5.3: Potencial anômalo. 5.4: Anomalia e distúrbio da gravidade. 5.5: Altura geoidal e anomalia da gravidade em série de harmônicos esféricos. 5.6: Componentes principais do desvio da vertical, em série de harmônicos esféricos.
- 6 – Determinação gravimétrica do geóide. 6.1: Fórmula de Stokes. 6.2: Considerações sobre a aplicação da fórmula de Stokes. 6.2: Desvio da vertical. Fórmulas de Vening Meinesz.

PHYSICAL GEODESY (3 CREDITS)

- 1 – Introduction.
- 2 – Gravity Field. 2.1: Gravitation and Gravity. 2.2: Potential of Gravity. 2.2.1: Potential of gravity - physical meaning.
- 3 – Development of the gravitational potential (W_g) in spherical harmonics series. 3.1: Examples of Legendre's associated functions. 3.2: Geometric representation of zonal spherical harmonics. 3.3: Geometric representation of sectorial spherical harmonics. 3.4: Geometric Representation of Tesseral Spherical Harmonics 3.5: Physical meaning of the spherical harmonics. 3.6: The coefficients (J_{nm} , K_{nm}) and (C_{nm} , S_{nm}) 3.7: Recurrence formulas.
- 4 – Models for the representation of the Earth. 4.1: The normal Earth.

- 5 – Sphere potential. 5.1: The coefficient $J_{2,0}$. 5.2: Normal gravity. 5.3: Anomalous potential. 5.4: Anomaly and disturbance of gravity. 5.5: Geoid height and gravity anomaly in spherical harmonics series. 5.6: Major components of the vertical deviation in spherical harmonics series.
- 6 – Gravimetric determination of the geoid. 6.1: Stokes formula. 6.2: Considerations on the application of the Stokes formula. 6.2: Vertical deviation: Vening Meinesz formulas.

GEODESIA FÍSICA (3 CRÉDITOS)

- 1 – Introdução.
- 2 – Campo de la Gravedad. 2.1: Gravitación y Gravedad. 2.2: Potencial de la Gravedad. 2.2.1: Sentido Físico del Potencial de la Gravedad.
- 3 – Desenvolvimento del Potencial Gravitacional (W_g) en série de harmónicos esféricos. 3.1: Exemplos de funciones asociadas de Legendre. 3.2: Representación Geométrica de los Harmónicos Esféricos Zonales. 3.3: Representación Geométrica de los Harmónicos Esféricos Sectoriais. 3.4: Representación Geométrica de los Harmónicos Esféricos Teserales. 3.5 Significado físico de los harmónicos esféricos. 3.6: Los coeficientes (J_{nm} , K_{nm}) e (C_{nm} , S_{nm}). 3.7: Fórmulas de recurrencia.
- 4 – Modelos de representación de la Terra. 4.1: La Tierra normal.
- 5 – Esferopotencial. 5.1: El coeficiente $J_{2,0}$. 5.2: Gravedad normal. 5.3: Potencial anómalo. 5.4: Anomalía y disturbio de la gravedad. 5.5: Altura geoidal y anomalía de la gravedad en serie de harmónicos esféricos. 5.6: Componentes principales del desvío de la vertical, en serie de harmónicos esféricos.
- 6 – Determinación gravimétrica del geode. 6.1: Fórmula de Stokes. 6.2: Consideraciones sobre la aplicación de la fórmula de Stokes. 6.2: Desvío de la vertical. Fórmulas de Vening Meinesz.

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