CURVED LINES AND SURFACES THEIR FORMATION

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Annotation: Each point of the generatrix describes a circle called a parallel. The largest and smallest parallels are called equator and throat, respectively. The planes passing through the axis of rotation are called meridional, they intersect the surface of rotation along lines called meridians.

*Keywords***:** Surface, rotation, arbitrary, curve, point, curve line, cylinder.

According to the law of education, it is divided into regular and irregular ones.

The regular ones are set graphically and analytically, the irregular ones are set only graphically. On the basis of deployment to the plane - deployable and non-deployable. According to the shape of the generatrix: - with rectilinear generatrix - linear surfaces; - with a curved generatrix - curved surfaces. According to the method of moving the generatrix: - with the translational movement of the generatrix; - with the rotational movement of the generatrix - the surface of rotation; - with the movement of the generatrix along a helical line - helical surfaces.

The surfaces in the complex drawing can be specified: Projections of the guides and the way the generators move along them. A family of lines belonging to a surface is a wireframe way of defining a surface. The outline of the surface, i.e. the lines that limit the area of existence of projections in the complex drawing.

Ruled surfaces: A ruled surface is generally uniquely determined by three guide lines, i.e. when the generatrix moves along them. Ruled surfaces are divided into deployable and non-deployable.

The unfolding ones include: cylindrical surfaces, conical surfaces, surfaces with a return rib (torso), prismatic surfaces, pyramidal surfaces. Cylindrical, conoid, oblique plane. Non-rotating ruled surfaces are surfaces with a plane of parallelism. A cylindroid is formed by movement along two curved guides m and n of a rectilinear generatrix l, which remains parallel to the plane of parallelism all the time

Conoid - differs from a cylindrical in that one of the guides is straight.

The oblique plane differs from the cylindrical plane in that both guides are straight. They intersect and are parallel to some plane (plane of parallelism).

Surfaces of rotation: A surface of rotation of a general kind is a surface that is formed by an arbitrary curve (flat or spatial) when it rotates around a fixed axis. In a particular case, when the straight line a rotates around the m axis, if the straight line a intersects the m axis at an improper point, a cylindrical surface is obtained, and if at its own point - a conical surface. Each point of the generatrix describes a circle called a parallel. The largest and smallest parallels are called equator and throat, respectively. The planes passing through the axis of rotation are called meridional, they intersect the surface of rotation along lines called meridians.

The meridional plane parallel to the V plane is called the main meridional plane, and the lines along which this plane intersects the surface of rotation are called the main meridians.

In technology, the surfaces of rotation of the second order - cylinder, cone, sphere - have become widespread. A single-cavity hyperboloid. A single-cavity hyperboloid of rotation is formed when the hyperbola rotates around an imaginary axis. This surface can also be obtained by rotating a rectilinear generatrix
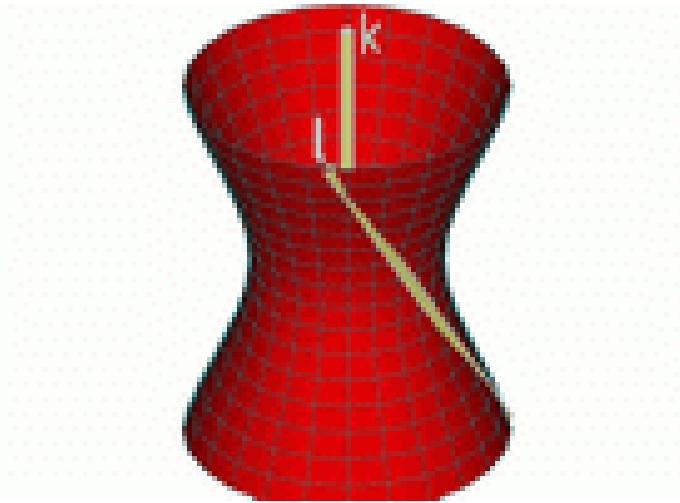
A two-cavity hyperboloid. A two-cavity hyperboloid of rotation is obtained by rotating the hyperbola around the real axis. The torus is obtained by rotating the circle m around the axis k lying in the plane of the circle, but not (intersecting the circle) passing through its center O.

Screw surfaces. Helical surfaces are formed when an arbitrary generatrix moves along a helical guide. If the generatrix is a straight line, then the formed surfaces are called helicoids.

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