

## **DESIGN OF CREATION OF COMPUTER ANIMATED MODELS ON DESCRIPTIVE GEOMETRY**

*Abstract: The design of creation of computer animation models on descriptive geometry is considered.*

*Keywords: computer animation models*

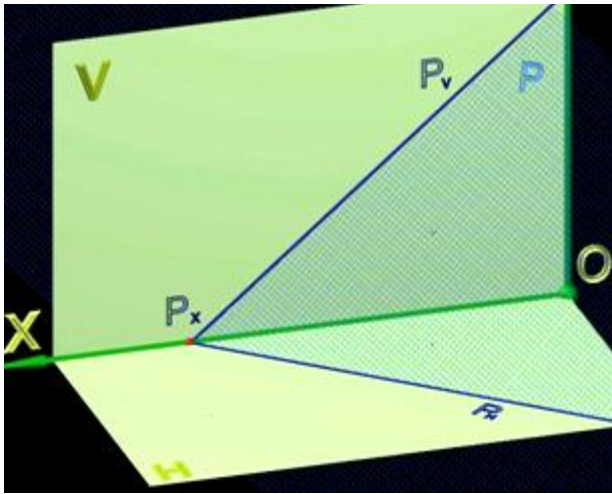
**Statement of the problem.** Known that in modern society design activities successfully applied in all sectors, including the education system, is of particular importance successful visualization. Hence the need for a computer-animated models (KAM).

**Analysis of recent research and publications.** Term **design**, indicating a new activity on the design of the objective world, originated in the early twentieth century. Currently, with the development of computer technology [1,2] design work is available and has a wealth of opportunities. Such opportunities are successfully applied in the educational system, such as the creation of textbooks [1,2]. However, the possibilities of animation ostayutsya underutilized.

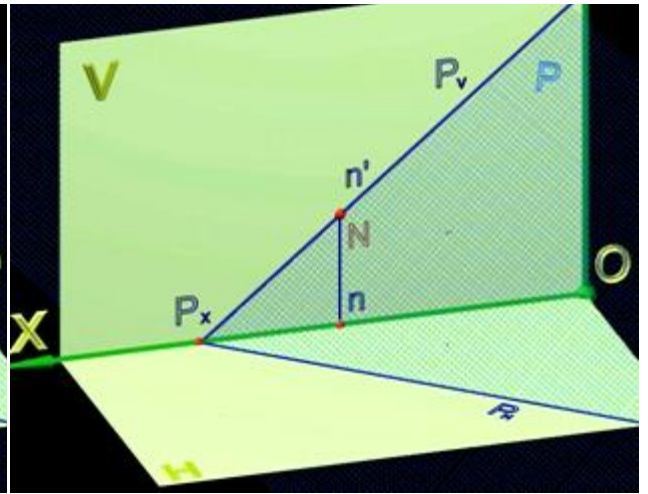
**The main part.** Subject "descriptive geometry" is based on the spatial processes, and their visual perception effectively if the observed object is interesting, proportional and comfortable to read. On this basis, established CWA the following criteria:

- conveniently selected angle;
- proper lighting;
- harmonious colors;
- realism and clarity of spatial processes;
- logical sequence of movements;
- logical conclusion CWA. Consider, for example, create a method of combining KAM.

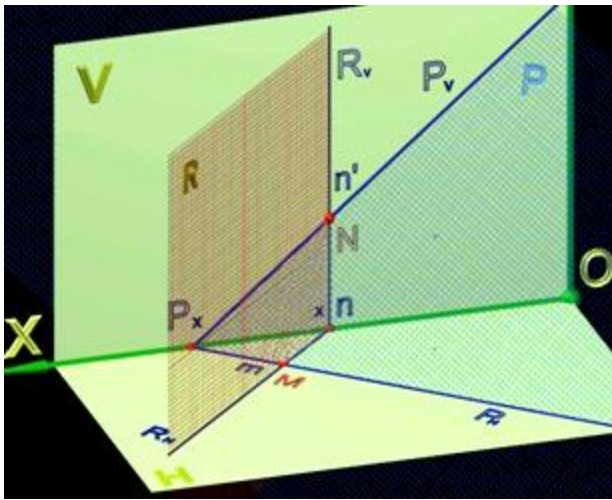
Rotation of the plane around its track to align with one of the planes is called projection combination. Way to combine - a special case of rotation when the axis is one of the next plane.



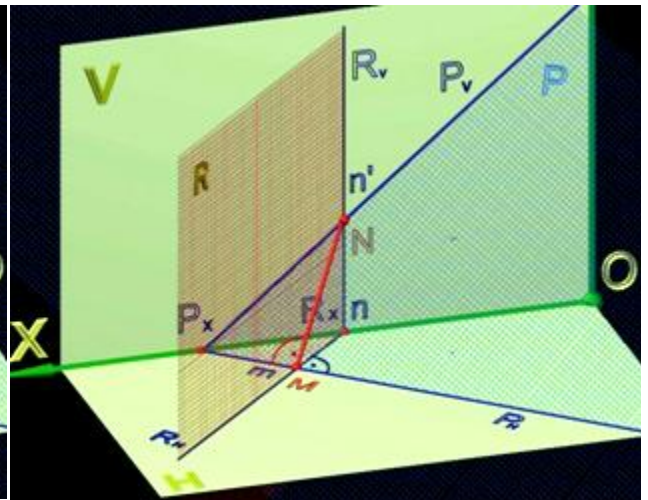
Rice 1.



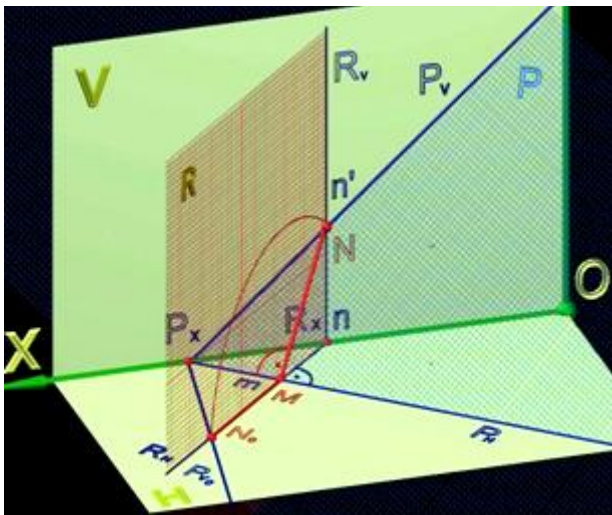
Rice 2.



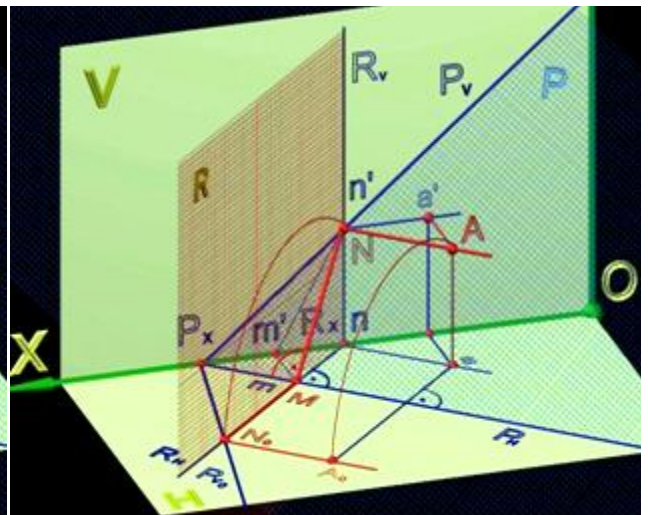
Rice 3.



Rice 4.



Rice 5.



Rice 6.

Suppose we want to rotate the plane of generic  $\mathbf{R}$  around its horizontal trace  $\mathbf{P}_H$  to align with the horizontal projection  $\mathbf{H}$ . Upon rotation of the direct  $\mathbf{P}_H$  remains in place. Point belonging to  $\mathbf{P}_V$  as a direct frontal following will

describe arcs lying in the plane of rotation perpendicular to the  $P_H$ , as to the axis of rotation.

KAM creation sequence is as follows:

- using 3dsMax, on a computer monitor will create a system of planes and VH projection plane P (PH, PV) ( Fig. 1);
- on the line PV choose an arbitrary point N (n, n ') ( Fig. 2);
- through the point N perform auxiliary plane R (RH, RV) perpendicular to the plane P ( Fig. 3) ;
- construct the line of intersection P (PH, PV) and R (RH, RV) that line MN (mn, m'n ') ( Fig. 4) ;
- turning point N (n ') around the axis of PH, that is a point -No combined with the position of the plane P H plane (Fig. 5) ;
- choosing on the horizontal plane NA P arbitrary point A (a, a ') and simultaneously obtain Ao -No , that is coincident position on the horizontal plane H NA (Fig. 6) ;

**Conclusions.** Thus, CWA provide favorable conditions observer, promoting effective learning of descriptive geometry.

**Prospects for further research.** Planned to determine the effectiveness of various CAM design in educational processes, lo, as well as the development of KAM for other topics of the course.

### Literature

1. Пекарев Л.Д. Самоучитель 3ds Max8–СПб.:БХВ–Петербург, 2006.–432.
2. Мердок Келли. Л. 3ds Max 5.: Пер. с англ.–М.: Издательский дом «Вильямс», 2005.–1136 с.
3. Ядгаров Дж.Я. Начертательная геометрия (на узб. языке). Учебник для вузов. Ташкент. «Турон–Икбол», –2007. –232 с.
4. Ядгаров Дж.Я., Ядгаров Дж. Дж. Начертательная геометрия (на узб. языке). Сборник задач по курсу и методическое указание по выполнению типичных задач. БухГУ, Бухара. «Зиё–Ризограф»,–2008,– 82 с.

### Аннотація

*Ядгаров Н.Д., Ядгаров Д.Д. Дизайн створення комп'ютерних анімаційних моделей з нарисної геометрії. Розглядається дизайн створення комп'ютерних анімаційних моделей з нарисної геометрії.*

Ключевые слова: компьютерные анимационные модели

### Анотація

*Ядгаров Н.Д., Ядгаров Д.Д. Дизайн створення комп'ютерних анімаційних моделей з нарисної геометрії. У статті розглядається дизайн створення комп'ютерних анімаційних моделей.*

*Ключові слова: комп'ютерні анімаційні моделі*