CLAIMS

1. Autostereoscopic display screen with P points-of-view, called screen points-of-view, P being an integer greater than or equal to 6, intended to display an autostereoscopic image at I points-of-view, called image points-of-view, I being an integer greater than or equal to 2, less than or equal to P/3, preferably equal to 2, said screen comprising:

- a matrix of pixels arranged by rows and by columns, each pixel being composed of a plurality of sub-pixels of different colors, each intended to display a sub-pixel of one of the image points-of-view,
- an array of cylindrical lenticules or a parallax barrier, called an optical array, configured to allow the projection of pairs of predetermined points-of-view of the screen towards the eyes of an observer located at a nominal distance from the screen, called flat tint distance,

said screen being characterized in that said optical array is configured so that the P points-of-view of the screen can be perceived successively in a direction, called horizontal direction, by said observer at said flat tint distance, in spaces in front of the screen, called lobes, each covering I times the average inter-pupillary distance of an observer, and so that the screen points-of-view of each pair of visible points-of-view by the observer at the flat tint distance, are separated by at least T points-of-view, called buffer points-of-view, T being greater than or equal to 2, so that it is possible to display successively for each lobe, each of the I image points-of-view, each repeated P/I times, and that each point-of-view visible to the observer at the flat tint distance can be surrounded by at least 2 buffer points-of-view each displaying this same image viewpoint.

2. Display screen according to claim 1, characterized in that I is equal to 2 and in that the said optical array is configured to be able to display in each lobe, M times the image point-of-view dedicated to the left eye of the observer and N times the image point-of-view dedicated to the right eye of the observer, M and N each being greater than or equal to 3 and their sum being equal to P, and by forming T buffer points-of-view between the point-of-view dedicated to the left

eye and the point-of-view dedicated to the right eye.

3. Display screen according to claim 2, characterized in that M and N are odd such that each image point-of-view dedicated to each eye of the observer can be surrounded, in each lobe, by the same number of buffer points-of-view.

4. Display screen according to one of claims 2 or 3, characterized in that M and N are equal so that the screen allows a symmetrical display of the points-of-view dedicated respectively to the left eye and to the observer's right eye.

5. Display screen according to one of claims 2 to 4, characterized in that P is equal to 10 so that the screen has 10 points-of-view and in that the said optical array is configured so that the pairs visible to the observer at the flat tint distance are views 1-6, 2-7, 3-8, 4-9, 5-10 for points-of-view numbered successively from 1 to 10 so that each sub-pixel perceived by each eye of the observer can be surrounded on each side by 2 buffer points-of-view.

6. Display screen according to one of claims 1 to 5, characterized in that the said optical array is formed of cylindrical lenses each having a main axis which forms an angle α with the direction of the columns.

7. Display screen according to claim 6, characterized in that the said angle α is between 0° and 45°, and preferably chosen from the group comprising the angles of 9.46°; 18.43°; 26.56°; and 33.69°.

8. Display screen according to one of claims 1 to 7, characterized in that each pixel of the said matrix of pixels is composed of a plurality of horizontal sub-pixels of different colors superimposed on each other in the direction columns.

9. Display screen according to one of claims 1 to 7, characterized in that each pixel of the said matrix of pixels is composed of a plurality of vertical sub-pixels of different colors juxtaposed to each other in the direction lines.

10. Device for displaying an autostereoscopic image at I points-of-view, called image point-of-view, comprising:

- a display screen according to one of claims 1 to 9,
- a display module configured to display for each lobe each of the I image points-of-view, each repeated P/I times, each point-of-view visible to the observer at the flat tint distance being framed at least

2 buffer points-of-view each displaying this same image point-of-view.

11. Display device according to claim 10, characterized in that I is equal to 2 and in that said display module is configured to display in each lobe formed by said display screen, M times the image point-of-view dedicated to the left eye of the observer and N times the point-of-view image dedicated to the right eye of the observer and forming T points-of-view, called buffer points-of-view, between the image point-of-view dedicated to the left eye and the image point-of-view dedicated to the right eye.

12. Display device according to claim 11, characterized in that it further comprises a device for detecting, at any instant, the position of the observer's head with respect to the said horizontal and/or vertical direction so as to allow said display module to slide the image points-of-view in each lobe such that said screen points-of-view visible to the observer are permanently framed by buffer points-of-view from the image point-of-view visible by that eye.

13. Display device according to claim 12, characterized in that the said detection device is configured to detect, at each instant, the position of the observer's head with respect to a predetermined point of the display screen, making it possible to define the coordinates X, Y, Z of the observer with a predetermined precision, in an orthonormal frame of reference of which said predetermined point of the screen is the origin of said frame, said screen defining the axes X and Y of this frame and the direction perpendicular to the screen defining the Z axis of this frame.

14. Method for displaying an autostereoscopic image at I points-of-view, I being an integer greater than or equal to 2, on a display screen at P points-of-view, called screen points-of-view, P being an integer greater than or equal to 6 and greater than or equal to 3I, comprising a matrix of pixels arranged by rows and by columns, each pixel being composed of a plurality of sub-pixels of different colors, each intended to display a sub-pixel of one of the image points-of-view, and an array of cylindrical lenticules or a parallax barrier, said optical array, configured to allow the projection of pairs of points-of-view of the

predetermined screen towards the eyes of an observer located at a nominal distance from the screen, called the flat tint distance, and so that the P points-of-view of the screen can be perceived successively in one direction, called the horizontal direction, by said observer at said flat tint distance, in spaces in front of the screen, said lobes, each covering each I times the average inter-pupillary distance of an observer, characterized in that it comprises, for each lobe, the allocation to each adjacent screen point-of-view of each image point-of-view visible by the observer at the flat tint distance, of a copy of this image point-of-view such that, in each lobe, each of the I image points-of-view visible to the observer at the tint distance plate is flanked by at least 2 buffer points-of-view each displaying this same image points-of-view, and in that it is made up of the succession of I image points-of-view each repeated P/I times.

15. Display method according to claim 14, characterized in that I is equal to 2 and in that it comprises, for each lobe:

- the assignment to the first M screen points-of-view of the image point-of-view dedicated to the left eye of the observer,
- the assignment to the following N screen points-of-view of the image point-of-view dedicated to the right eye of the observer,

M and N each being greater than or equal to 3 and their sum being equal to P.