WHAT IS CLAIMED IS:

1. A digital radiography system, comprising:

detectors mounted on a detector arm support formed in a first plane; and

a ray source being non-coplanar with the first plane.

2. The digital radiography system according to claim 1, wherein

the detector arm support comprises a first detector arm support and at least one second detector arm support for mounting the detectors.

3. The digital radiography system according to claim 2, further comprising:

an image processing apparatus configured to acquire a corrected detection image according to a target spot of the ray source, locations of the first detector arm support and the second detector arm support, a moving speed of an object under detection, and detection values of the first detector arm support and the second detector arm support.

4. The digital radiography system according to claim 3, wherein the image processing apparatus comprises:

a projection acquisition portion configured to acquire projections of the target spot and the second detector arm support on a plane perpendicular to the first plane and a second plane formed by the target spot and the first detector arm support;

a time deviation correction portion configured to acquire an angle between the first plane and the second plane using the projections on the plane perpendicular to the first plane and the second plane, and correct, according to the angle, a time deviation of detection data due to a distance by which the object under detection moves from the first plane to the second plane in a transfer direction; and

a space deviation correction portion configured to perform space deviation correction on a detection value of a projection of each pixel on the second detector arm support on the second plane, and generate a final image of the object under detection based on the corrected detection

value and the detection value of the first detector arm support.

5. The digital radiography system according to claim 4, wherein the time deviation correction portion comprises:

an angle calculation portion configured to calculate, using the plane perpendicular to the first plane and the second plane, an angle between the second detector arm support and a projected second detector arm support, wherein the projected second detector arm support is a projection of the second detector arm support on the second plane in the transfer direction of the object under detection;

a deviation ratio calculation portion configured to calculate, according to the angle, a preset equivalent height of the object under detection, and the moving speed of the object under detection, a ratio of a distance deviation between a detector on the second detector arm support and a projection of the detector with respect to a reference distance deviation between a detector on the second detector arm support at the equivalent height and a projection of the detector, in the transfer direction of the object under detection; and

a detection data correction portion configured to correct, for a time sequence of detection data collected by the detector on the second detector arm support, a time deviation of the time sequence of the collected detection data according to the ratio and a time sampling period of a detector, so as to obtain corrected time deviation corrected data.

6. The digital radiography system according to claim 5, wherein

the space deviation correction portion re-projects the projected second detector arm support onto a same straight line as the first detector arm support and acquires the final image of the object under detection.

7. The digital radiography system according to claim 5, wherein

detection data at a time point other than sampling time is obtained by interpolation.

8. The digital radiography system according to claim 7, wherein

the interpolation comprises one of nearest neighbor interpolation, linear interpolation and quadratic interpolation.

9. The digital radiography system according to claim 3, comprising:

a plurality of rows of the detectors located in different planes,

wherein a plurality of second detector arm supports are located in a second plane.

10. The digital radiography system according to claim 9, wherein the image processing apparatus comprises:

a sampling point determination portion configured to select a row of detectors from the plurality of rows of the detectors and acquire a plurality of sampling points of the row of detectors on an extension line extending from an intersection point between the first detector arm support and the second detector arm support;

an intersection point acquisition portion configured to acquire a plurality of intersection points respectively between lines connecting the target spot of the ray source with the plurality of sampling points and the second plane;

a sampling point pixel value acquisition portion configured to calculate, according to a location of each detector pixel in the second plane and a detection value of the detector pixel, detection values of the plurality of intersection points as detection values of the plurality of sampling points; and

an image acquisition portion configured to generate an image of the object under detection according to the detection values of the plurality of sampling points and a detection value of a detector on the first detector arm support.

11. The digital radiography system according to claim 9, wherein the image processing apparatus comprises:

a projection point determination portion configured to select a row of detectors from the plurality of rows of the detectors, and acquire, in a projection plane formed by the target spot of the ray source and the first detection arm support for the row of detectors, any point located

in the projection plane at a side opposite to the first detector arm support with respect to the second plane and intersects the second plane as a projection point;

an intersection point acquisition portion configured to acquire an intersection point between a line connecting the target spot with the projection point and the second plane;

a projection point pixel value acquisition portion configured to calculate, according to a location of each detector pixel in the second plane and a detection value of the detector pixel, a detection value of the intersection point as a detection value of the projection point; and

a corrected image acquisition portion configured to re-project the projection point onto a same straight line as the first detector arm support, and generate a corrected image of the object under detection according to a corrected detection value and a detection value of a detector on the first detector arm support for the row of detectors.

12. The digital radiography system according to claim 10, wherein

the detection value of the intersection point is obtained by interpolation; and

the interpolation comprises one of nearest neighbor interpolation, linear interpolation and quadratic interpolation.

13. The digital radiography system according to claim 10, wherein

the farther the selected row of detectors away from the ray source, the greater an imaging range of the image of the object under detection.

14. The digital radiography system according to claim 10, wherein

the sampling points are equally spaced or arbitrarily spaced.

15. The digital radiography system according to claim 10, wherein

the plurality of rows of the detectors are equally spaced or unequally spaced.

16. The digital radiography system according to claim 2, wherein

the detectors are arranged in a straight line or in an arc.

17. The digital radiography system according to claim 16, wherein

under a condition that the detectors are arranged in an arc, the first detector arm support is a portion mounted with a single detector or a single module mounted with a plurality of detectors in a straight line.

18. A digital radiography method applied to the digital radiography system according to claim 3, comprising:

a projection acquisition step, comprising acquiring projections of the target spot and the second detector arm support on a plane perpendicular to the first plane and a second plane formed by the target spot and the first detector arm support;

a time deviation correction step, comprising acquiring an angle between the first plane and the second plane using the projections on the plane perpendicular to the first plane and the second plane, and correcting, according to the angle, a time deviation of detection data due to a distance by which the object under detection moves from the first plane to the second plane in a transfer direction; and

a space deviation correction step, comprising performing space deviation correction on a detection value of a projection of each pixel on the second detector arm support on the second plane, and generating a final image of the object under detection based on the corrected detection value and the detection value of the first detector arm support.

19. A digital radiography method applied to the digital radiography system according to claim 9, comprising:

a sampling point determination step, comprising selecting a row of detectors from the plurality of rows of the detectors and acquiring a plurality of sampling points of the row of detectors on an extension line extending from an intersection point between the first detector arm support and the second detector arm support;

an intersection point acquisition step, comprising acquiring a plurality of intersection points respectively between lines connecting the target spot of the ray source with the plurality

of sampling points and the second plane;

a sampling point pixel value acquisition step, comprising calculating, according to a location of each detector pixel in the second plane and a detection value of the detector pixel, detection values of the plurality of intersection points as detection values of the plurality of sampling points; and

an image acquisition step, comprising generating an image of the object under detection according to the detection values of the plurality of sampling points and a detection value of a detector on the first detector arm support.

20. A digital radiography method applied to the digital radiography system according to claim 9, comprising:

a projection point determination step, comprising selecting a row of detectors from the plurality of rows of the detectors, and acquiring, in a projection plane formed by the target spot of the ray source and the first detection arm support for the row of detectors, any point located in the projection plane at a side opposite to the first detector arm support with respect to the second plane and intersects the second plane as a projection point;

an intersection point acquisition step, comprising acquiring an intersection point between a line connecting the target spot with the projection point and the second plane;

a projection point pixel value acquisition step, comprising calculating, according to a location of each detector pixel in the second plane and a detection value of the detector pixel, a detection value of the intersection point as a detection value of the projection point; and

a corrected image acquisition step, comprising re-projecting the projection point onto a same straight line as the first detector arm support, and generating a corrected image of the object under detection according to a corrected detection value and a detection value of a detector on the first detector arm support for the row of detectors.